Alberta Traffic Collision Statistics

Alberta
TRANSPORTATION
Transportation Safety Branch

ALBERTA

TRAFFIC COLLISION STATISTICS

1985

Alberta Transportation
Transportation Safety Branch
Planning and Program Support

ERRATA

PAGE 54

Drivers failed to yield the right-of-way to pedestrians in **30.6%** of the collisions.

PAGE 58

The majority of pedestrian casualty collisions **(92.5%)** occurred in urban areas. Only **5.1%** occurred in rural areas.

PAGE 59

Over half **(54.8%)** of the collisions involving pedestrians involved no improper driver actions.

PAGE 72

Of all persons killed in traffic crashes during 1985, only **14.7%** were wearing seat belts at the time of the crash.

1985
ALBERTA TRAFFIC
COLLISION STATISTICS

1985
OVERVIEW

- The number of traffic **fatalities increased 13.4%** over the past year from 470 deaths in 1984 to 533 deaths in 1985.

- The number of **traffic injuries increased 4.7%** over the past year from 18,955 injuries in 1984 to 19,855 injuries in 1985.

- The number of **traffic collisions increased 10.6%** over the past year from 88,999 collisions in 1984 to 98,389 collisions in 1985.

- **Casualty collisions** occurred most frequently during the **summer months,** while **property damage only collisions** occurred most frequently during the **winter months.**

- **Friday** was the most collision-prone day of the week.

- The most collision-prone period of time was the **afternoon rush-hour.**

- **Fatal collisions** occurred most frequently in **rural areas,** whereas **injury** and **property damage only collisions** occurred most frequently in **urban areas.**

- **Injury rates** were highest for persons between the **ages of 15 and 24.**

- **Male drivers** between the **ages of 16 and 19** were most likely to be involved in traffic collisions.

- **Human error** contributed to the majority of collisions.

- **25.9% of drivers** involved in **fatal crashes had been drinking** compared to **11.8% of drivers in injury crashes.**

- **14.7%** of people injured in traffic collisions were wearing a **seatbelt** at the time of the crash.

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PREFACE

The purpose of this report is to provide an overview of the "who", "what", "when", "where", "why", and "how" of traffic collisions which occurred in Alberta during 1985. Although the report is general in nature, it will pay particular attention to casualty collisions, that is, those collisions which resulted in death or injury. Since 1984, limited information is collected for crashes involving only properly damage.

Legislation in Alberta requires that a traffic collision, which results in either death, injury or property damage to an apparent extent of $500.00 or more, be reported immediately to an authorized peace officer. The officer completes a standardized collision report form which provides information on various aspects of the traffic collision. This report is based on the data collected from these report forms.

The collision report form is issued with standard instructions to every police force within Alberta, to be completed by the officer attending the scene of a motor vehicle crash. Police priorities at the scene of a crash are to care for the injured, protect the motoring public and clear the roadway. Completion of the collision report form is a secondary, but necessary, task.

After completion, the information on the collision report form is coded for input onto computer files. The Provincial Traffic Crash Information System, which has been operational since 1978, undergoes several manual and computerized inspections each year in order to insure maximum accuracy of the final data output.

Due to continuing police investigation, some numbers presented in this report maybe subject to revision. It should also be noted that not all percentage columns will total 100 due to rounding error. However, the patterns and trends detailed in this report represent an accurate description of Alberta's traffic collision picture.

TABLE OF CONTENTS

PAGE

1985 OVERVIEW i

PREFACE iii

I. 1985 TRAFFIC COLLISION SUMMARY

1. Alberta Traffic Collisions 1981-1985 1
2. Five Year Trends 1
3. Provincial Comparisons 2

II. WHEN THE COLLISIONS OCCURRED

1. Collision Occurrence by Month 13
2. Collision Occurrence by Day of Week 13
3. Collision Occurrence by Time 13
4. Collisions During 1985 Holidays 13

III. VICTIMS

1. Road User Class 19
2. Age of Casualties 19

IV. DRIVER COMPONENT

1. Age and Sex of Drivers Involved in Collisions 23
2. Driver Actions 23

V. VEHICLE COMPONENT

1. Types of Vehicles 28
2. Vehicular Factors 28
3. Point of Impact 28

VI. ENVIRONMENTAL COMPONENT

1. Location 32
2. Surface Condition 32
3. Road Condition 32

VII. SPECIAL TYPES OF VEHICLES

A. MOTORCYCLES

1. Casualty Collisions Involving Motorcycles 36
2. Age and Sex of Drivers 36
3. Driver Action 36
4. Driver Condition 36
5. Vehicular Factors 36
6. Surface Condition 36

PAGE

B. TRACTOR TRAILERS

1. Casualty Collisions Involving Tractor Trailers..... 37
2. Driver Action 37
3. Driver Condition 37
4. Vehicular Factors 37
5. Month of Occurrence 37

C. TRAINS

1. Casualty Collisions Involving Trains 37
2. Month of Occurrence 37
3. Actions of Drivers Involved 37

VIII. PEDESTRIANS

1. Month of Occurrence 54
2. Day of Occurrence 54
3. Hour of Occurrence 54
4. Actions of Drivers Involved 54
5. Age of Pedestrian Casualties..... 54

IX. TRAFFIC SAFETY ISSUES

A. ALCOHOL INVOLVEMENT

1. Condition of Driver..... 62
2. Age and Sex of Drivers Involved..... 62
3. Month of Occurrence 62
4. Day of Occurrence 62
5. Hour of Occurrence 62
6. Five Year Trend..... 62

B. RESTRAINT USE

1. Restraint Usage Rate By Age 62

LIST OF TABLES

PAGE

I. 1985 TRAFFIC COLLISION SUMMARY

Table 1.1 Alberta Traffic Collisions 1981-1985 3
Table 1.2 Traffic Collision Rates 1981-1985 4
Table 1.3 Provincial Comparisons of Casualty Rates per 100 Million Vehicle Kilometres Travelled 8

II. WHEN THE COLLISIONS OCCURRED

Table 2.1 Collision Occurrence by Month 14
Table 2.2 Collision Occurrence by Day of Week 15
Table 2.3 Collision Occurrence by Time Periods 16
Table 2.4 Collisions During 1985 Holidays 18

III. VICTIMS

Table 3.1 Injuries and Fatalities by Road User Class 20
Table 3.2 Age of Persons Involved in Casualty Collisions 21

IV. DRIVER COMPONENT

Table 4.1 Age and Sex of Drivers Involved in Casualty Collisions: Per 1,000 Licensed Drivers 24
Table 4.2 Actions of Drivers Involved in Casualty Collisions 27

V. VEHICLE COMPONENT

Table 5.1 Types of Vehicles Involved in Casualty Collisions 29
Table 5.2 Vehicular Factors Involved in Casualty Collisions 30
Table 5.3 Point of Impact on Vehicles Involved in Casualty Collisions 31

VI. ENVIRONMENTAL COMPONENT

Table 6.1 Location of Collisions 33
Table 6.2 Casualty Collision Occurrence by Surface Condition .. 34
Table 6.3 Road Location of Casualty Collisions 35

VII. SPECIAL TYPES OF VEHICLES

A. MOTORCYCLES

Table 7.1 Casualty Collisions Involving Motorcycles 1981-1985 .. 38
Table 7.2 Age and Sex of Motorcycle Drivers Involved in Casualty Collisions 40
Table 7.3 Casualty Collisions Involving Motorcycles: Driver Action 41

VII. SPECIAL TYPES OF VEHICLES - CONTINUED PAGE

Table 7.4 Casualty Collisions Involving Motorcycles: Driver Condition 42
Table 7.5 Casualty Collisions Involving Motorcycles: Vehicular Factors 43
Table 7.6 Casualty Collisions Involving Motorcycles: Month of Occurrence 44
Table 7.7 Casualty Collisions Involving Motorcycles: Road Surface Condition 45

B. TRACTOR TRAILERS

Table 7.8 Casualty Collisons Involving Tractor Trailers 1981-1985 46
Table 7.9 Casualty Collisions Involving Tractor Trailers: Driver Action 47
Table 7.10 Casualty Collisions Involving Tractor Trailers: Driver Condition 48
Table 7.11 Casualty Collisions Involving Tractor Trailers: Vehicular Factors 49
Table 7.12 Casualty Collisions Involving Tractor Trailers: Month of Occurrence 50

C. TRAINS

Table 7.13 Casualty Collisions Involving Trains 1981-1985 51
Table 7.14 Casualty Collisions Involving Trains: Month of Occurrence 52
Table 7.15 Casualty Collisions Involving Trains: Driver Action 53

VIII. PEDESTRIANS

Table 8.1 Pedestrian Casualty Collisions: Month of Occurrence 55
Table 8.2 Pedestrian Casualty Collisions: Day of Occurrence 56
Table 8.3 Pedestrian Casualty Collisions: Time Period 57
Table 8.4 Pedestrian Casualty Collisions: Location 58
Table 8.5 Pedestrian Casualty Collisions: Driver Action 59
Table 8.6 Age of Pedestrian Casualties 60

IX. TRAFFIC SAFETY ISSUES

A. ALCOHOL INVOLVEMENT

Table 9.1 Condition of Drivers Involved in Casualty Collisions ... 63
Table 9.2 Age and Sex of Drinking Drivers Involved in Casualty Collisions 66

IX. TRAFFIC SAFETY ISSUES - CONTINUED PAGE

Table 9.3 Alcohol - Involved Casualty Collisions: Month of Occurrence 68

Table 9.4 Alcohol - Involved Casualty Collisions: Day of Week..... 69

Table 9.5 Alcohol - Involved Casualty Collisions: Time of Occurrence..... 70

B. OCCUPANT RESTRAINT USE

Table 9.6 Restraint Usage Rate By Age of Occupant Casualties in Traffic Collisions 72

LIST OF FIGURES

PAGE

FIGURE 1
Traffic Collision Rates in Alberta 1981-1985 7

FIGURE 2
Provincial Traffic Fatality Rates
Per 100 Million Vehicle Kilometres Travelled 1985 12

FIGURE 3
Collision Occurence by: Month; Day of Week; Time Periods - 1985 ... 17

FIGURE 4
Age of Casualties
Casualty Rate Per 10,000 Population 1985 22

FIGURE 5
Age and Sex of Drivers Involved in Casualty Collisions
Collision Rate Per 1,000 Licensed Drivers 1985 26

FIGURE 6
Number of Motorcycles Involved in Fatal Collisions
Per 10,000 Registered Motorcycles 1985..... 39

FIGURE 7
Pedestrian Casualties
Rate Per 10,000 Population 1985 61

FIGURE 8
Involvement of Drinking Drivers in
Casualty Collisions 1981-1985..... 64

FIGURE 9
Driver Condition in Casualty Collisions 1985..... 65

FIGURE 10
Age and Sex of Drinking Drivers Involved In
Casualty Collisions Rate Per 1000 Licensed Drivers 67

FIGURE 11
Alcohol-Involved Fatal Collision Occurrence
by: Month; Day of Week; Time Period - 1985 71

FIGURE 12
Restraint Usage Rates By Age of Occupants
Injured in Collisions in Alberta 1985..... 73

1985 TRAFFIC COLLISION SUMMARY

INTRODUCTION

- During 1985 98,389 traffic collisions were recorded on Alberta roadways. Approximately 87% (85,224) of these crashes involved property damage only, while approximately 13% (12,733) were non-fatal injury collisions. Fatal crashes accounted for less than 1% (432) of the total reported collisions.

FIVE YEAR TRENDS

- In order to better understand the provincial collision history over the past 5 years, it is necessary to examine collision rates as well as the absolute numbers. These rates are based on estimates of Alberta's licensed drivers, registered vehicles, population, and vehicle kilometres travelled.

- Fatal collision rates and fatality rates have generally decreased over the past five years but have risen slightly over the past two years. Specifically, the fatal collision rate, in terms of vehicle kilometres travelled, stands at 2.0 compared to the five year high of 2.5 registered in 1981.

- Non-fatal injury collision rates and non-fatal injury rates decreased steadily until 1984. In 1985, the non-fatal injury rate, in terms of vehicle kilometres travelled, stands at 93.7. This is up from 1984, but again down 11.5% from the 1981 high of 105.9.

- Both the property damage and total collision rates have followed a similar trend. In terms of vehicle kilometres travelled, these rates now stand at 402.0 and 464.1, respectively. Once again up slightly from 1984, but down from the 1981 figure.

PROVINCIAL COMPARISONS

- In order to get a clear picture of Alberta's traffic injuries in comparison to other provinces, rates rather than absolute numbers were also utilized. In this instance, injury rates per vehicle kilometres travelled were examined.

- For 1981, approximately half of the provinces recorded higher injury and fatality rates than Alberta. This began to change in 1982, so that in 1985, of those provinces for which information was available, only two, Manitoba and Newfoundland, recorded a lower fatality rate.

Table 1.1

ALBERTA TRAFFIC COLLISIONS
1981 - 1985

Severity of Collision	1985	1984**	1983	1982*	1981
Fatal Collisions	432	401	370	429	578
Non-Fatal Injury Collisions	12733	12100	12966	14737	16397
Property Damage Only Collisions	85224	76498	81871	85525	104355
TOTAL Reportable Collisions	98389	88999	95207	100691	121330
Number Killed	533	470	428	502	700
Number Injured	19855	18955	19237	21925	24603
TOTAL Number of Casualties	20388	19425	19665	22427	25303

OBSERVATIONS

Over the past year the overall number of collisions increased 10.6%. Injury collisions increased 5.2% while fatal crashes increased 7.7%. The number of fatalities has increased by 13.4% from 1984 to 1985, while the number of injuries increased by 4.7%. In terms of the past four years, overall collisions and injury collisions declined from 1982 to 1983 but increased over the next two years. The number of people killed decreased steadily from 1981 to 1983, but increased over the next two years.

* On January 1, 1982, the reporting limit for a collision was increased from $350.00 to $500.00.

** Since publication of the 1984 Alberta Traffic Collision Statistics the final figures have been revised to those above.

Table 1.2

TRAFFIC COLLISION RATES

1981 - 1985

Severity of Collision	Per 10,000 Licensed Drivers *					Per 10,000 Population *				
	1985	**1984**	**1983**	**1982**	**1981**	**1985**	**1984**	**1983**	**1982**	**1981**
Fatal Collisions	**2.4**	2.2	2.0	2.4	3.4	**1.8**	1.7	1.6	1.8	2.5
Number Killed	**3.0**	2.6	2.4	2.8	4.1	**2.3**	2.0	1.8	2.1	3.1
Non-Fatal Injury Collisions	**70.8**	66.5	71.3	81.9	96.1	**54.2**	51.5	55.2	62.2	71.5
Number Injured	**110.5**	104.2	105.8	121.8	144.2	**84.5**	80.7	81.9	92.4	107.3
Property Damage Only Collisions **	**474.2**	420.7	450.3	475.1	611.7	**362.8**	325.7	348.4	360.5	455.0
TOTAL Reportable Collisions	**547.4**	489.5	523.6	559.4	711.2	**418.9**	378.9	405.1	424.5	529.0

Table 1.2 Continued

Severity of Collision	Per 10,000 Registered Vehicles *					Per 100 Million Vehicle Kilometres *				
	1985	**1984**	**1983**	**1982**	**1981**	**1985**	**1984**	**1983**	**1982**	**1981**
Fatal Collisions	**2.1**	1.9	1.8	2.1	2.8	**2.0**	1.7	1.6	1.9	2.5
Number Killed	**2.6**	2.3	2.1	2.4	3.5	**2.5**	2.0	1.9	2.2	3.0
Non-Fatal Injury Collisions	**62.6**	58.3	63.1	70.6	80.0	**60.1**	54.1	57.8	63.6	70.6
Number Injured	**97.6**	91.3	93.6	105.0	121.3	**93.7**	84.8	85.7	94.6	105.9
Property Damage Only Collisions **	**419.0**	368.3	398.2	409.5	514.5	**402.0**	342.2	364.7	368.9	449.2
TOTAL Reportable Collisions	**483.7**	428.5	463.1	482.2	597.3	**464.1**	398.1	424.1	434.4	522.3

TABLE 1.2 - Continued

OBSERVATIONS

Fatal collision rates and fatality rates in terms of licensed drivers, population, registered vehicles and vehicle kilometres travelled have generally decreased until 1983 but have risen slightly over the past two years. Specifically, over the past year, in terms of vehicle kilometres travelled, fatal collision rates increased to 2.0 from 1.7 in 1984. In 1985, non-fatal injury collision rates increased after a four year decline. Over the past year, in terms of vehicle kilometres travelled, non-fatal injury collison rates increased 60.1 from 54.1 in 1984 and property damage and total collisions have increased to 402.0 and 464.1, respectively.

* Sources:

Licensed Drivers - Operator Statistics, Motor Vehicles Division, Alberta Solicitor General, May 31, 1985.

Population - Based on postcensal estimate of the population by sex and age. Canada and Provinces, 1985, Statistics Canada.

Registered Vehicles - Motor Vehicles Division, Alberta Solicitor General, March 31, 1985.

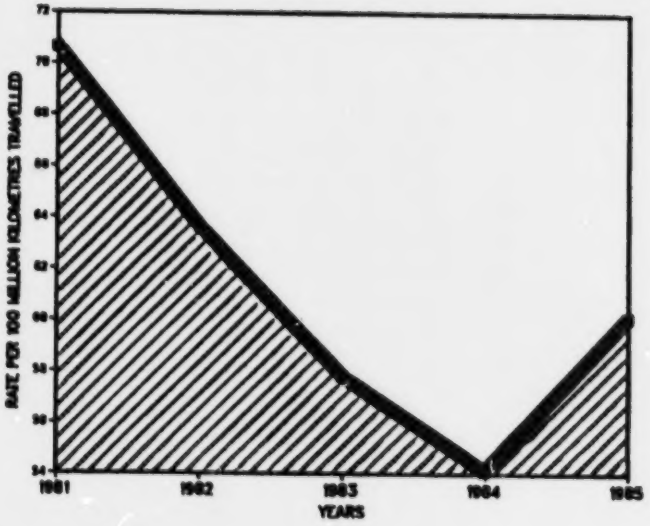
Vehicle Km - Estimated on the basis of gross sales of gasoline, information supplied by Alberta Treasury.

** On January 1, 1982, the reporting limit for a collision was increased from $350.00 to $500.00.

TRAFFIC COLLISION RATES IN ALBERTA 1981–1985

FATAL COLLISION RATE IN ALBERTA
1981–1985

INJURY COLLISION RATE IN ALBERTA
1981–1985



PROPERTY DAMAGE COLLISION RATE IN ALBERTA
1981–1985

COLLISION RATE OF ALL COLLISIONS IN ALBERTA
1981–1985

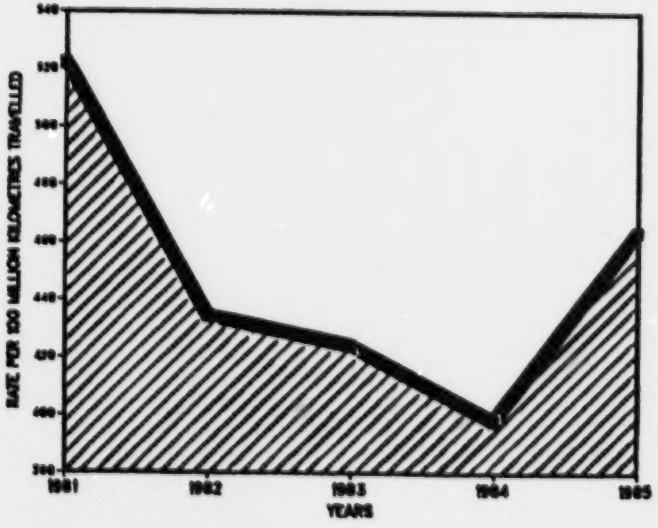


Figure 1

Table 1.3

PROVINCIAL COMPARISONS OF CASUALTY RATES PER 100 MILLION VEHICLE KILOMETRES *TRAVELLED 1981 - 1985

	ALBERTA Per 100 Million Vehicle Km		B.C. Per 100 Million Vehicle Km		SASKATCHEWAN Per 100 Million Vehicle Km		MANITOBA Per 100 Million Vehicle Km	
	N	Rate	N	Rate	N	Rate	N	Rate
1985								
Number Killed	533	2.5	483	2.6	214	**	133	1.8
Number Injured	19855	93.7	34368	182.9	8465	**	**	**
TOTAL Casualties	20388	96.2	34851	185.5	8679	**	**	**
1984								
Number Killed	470	2.0	525	2.8	221	**	127	1.7
Number Injured	18995	84.8	32407	172.5	7904	**	11664	159.6
TOTAL Casualties	19425	86.8	32932	175.3	8125	**	11791	161.3
1983								
Number Killed	428	1.9	607	3.2	235	**	133	1.8
Number Injured	19237	85.7	31855	166.9	8262	**	10798	145.5
TOTAL Casualties	19665	87.6	32462	170.1	8497	**	10931	147.3
1982								
Number Killed	502	2.2	601	3.0	240	**	151	2.0
Number Injured	21925	94.6	33807	167.7	8516	**	10309	100.8
TOTAL Casualties	22427	96.8	34408	170.7	8756	**	10460	102.8
1981								
Number Killed	700	3.0	860	3.8	262	2.7	198	2.5
Number Injured	24603	105.9	44033	196.8	8660	88.7	10970	139.6
TOTAL Casualties	25303	108.9	44893	200.6	8922	91.4	11168	142.1

Table 1.3 Continued

	ALBERTA		ONTARIO		QUEBEC		N.B.	
	Per 100 Million Vehicle Km		Per 100 Million Vehicle Km		Per 100 Million Vehicle Km		Per 100 Million Vehicle Km	
	N	Rate	N	Rate	N	Rate	N	Rate
1985								
Number Killed	**533**	**2.5**	**	**	**1388**	**4.1**	**142**	**3.0**
Number Injured	**19855**	**93.7**	**	**	**63108**	**186.5**	**	**
TOTAL Casualties	**20388**	**96.2**	**	**	**64496**	**190.6**	**	**
1984								
Number Killed	470	2.0	1132	**	1224	3.6	157	3.3
Number Injured	18995	84.8	97230	**	55175	163.1	5581	116.0
TOTAL Casualties	19425	86.8	98362	**	56399	166.7	5738	119.3
1983								
Number Killed	428	1.9	1204	**	1183	3.5	122	2.6
Number Injured	19237	85.7	91706	**	49375	144.8	5087	108.2
TOTAL Casualties	19665	87.6	92910	**	50558	148.3	5209	110.8
1982								
Number Killed	502	2.2	1138	1.9	1082	3.0	204	4.0
Number Injured	21925	94.6	92815	156.4	45412	128.0	5217	120.3
TOTAL Casualties	22427	96.8	93953	158.3	46494	131.0	5421	124.3
1981								
Number Killed	700	3.0	1445	2.2	1464	3.6	188	3.4
Number Injured	24603	105.9	100321	155.0	59155	145.2	5252	94.3
TOTAL Casualties	25303	108.9	101766	157.2	60619	148.8	5440	97.7

Table 1.3 Continued

	ALBERTA Per 100 Million Vehicle Km		N.S Per 100 Million Vehicle Km		P.E.I. Per 100 Million Vehicle Km		NEWFOUNDLAND Per 100 Million Vehicle Km	
	N	Rate	N	Rate	N	Rate	N	Rate
1985								
Number Killed	**533**	**2.5**	**155**	**2.9**	**37**	**4.3**	**61**	**2.2**
Number Injured	**19855**	**93.7**	**	**	**882**	**103.6**	**2179**	**78.9**
TOTAL Casualties	**20388**	**96.2**	**	**	**919**	**108.0**	**2240**	**81.1**
1984								
Number Killed	470	2.0	149	2.8	31	3.6	57	2.1
Number Injured	18995	84.8	**	**	754	88.7	1358	49.2
TOTAL Casualties	19425	86.8	**	**	785	92.3	1415	51.3
1983								
Number Killed	428	1.9	159	3.0	31	3.6	97	3.5
Number Injured	19237	85.7	**	**	861	101.3	2205	79.9
TOTAL Casualties	19665	87.6	**	**	892	104.9	2302	83.4
1982								
Number Killed	502	2.2	170	3.1	16	1.9	59	2.0
Number Injured	21925	94.6	4355	78.3	640	83.3	2350	81.6
TOTAL Casualties	22427	96.8	4525	81.4	656	85.2	2409	83.6
1981								
Number Killed	700	3.0	165	2.8	21	2.3	78	2.6
Number Injured	24603	105.9	4342	73.7	737	81.0	2750	90.2
TOTAL Casualties	25303	108.9	4507	76.5	758	83.3	2828	92.8

Table 1.3 Continued

OBSERVATIONS

In 1981 approximately half of the provinces recorded higher injury and fatality rates than Alberta, while the remaining half recorded lower casualty rates. However, since 1982, of those provinces for which information was available, most recorded higher fatality and injury rates than Alberta. During 1985, only two provinces (Manitoba and Newfoundland) recorded lower fatality rates than Alberta.

Sources:

* Casualty Statistics - Information supplied by each province. Vehicle km were estimated on the basis of gross sales of gasoline, information supplied by Statistics Canada. Catalogue No. 53-218 (1984).

** Not available

Table 4.1 - Continued

OBSERVATIONS

Overall casualty collision rates per licensed driver indicated that 18-19 year olds were more likely to be involved in a traffic collision than any other age group. Females 16 to 19 years of age also exhibited high involvement rates. The next age group most likely to be involved in casualty crashes were 16 to 17 year olds. Drivers over the age of 55 were least likely to be involved in a casualty crash.

* Includes drivers whose sex was unspecified on the collision report form.

** Source: Alberta Solicitor General - Motor Vehicles Division. Operator Statistics, May 31, 1985

AGE AND SEX OF DRIVERS INVOLVED IN CASUALTY COLLISIONS
COLLISION RATE PER 1,000 LICENSED DRIVERS
1985

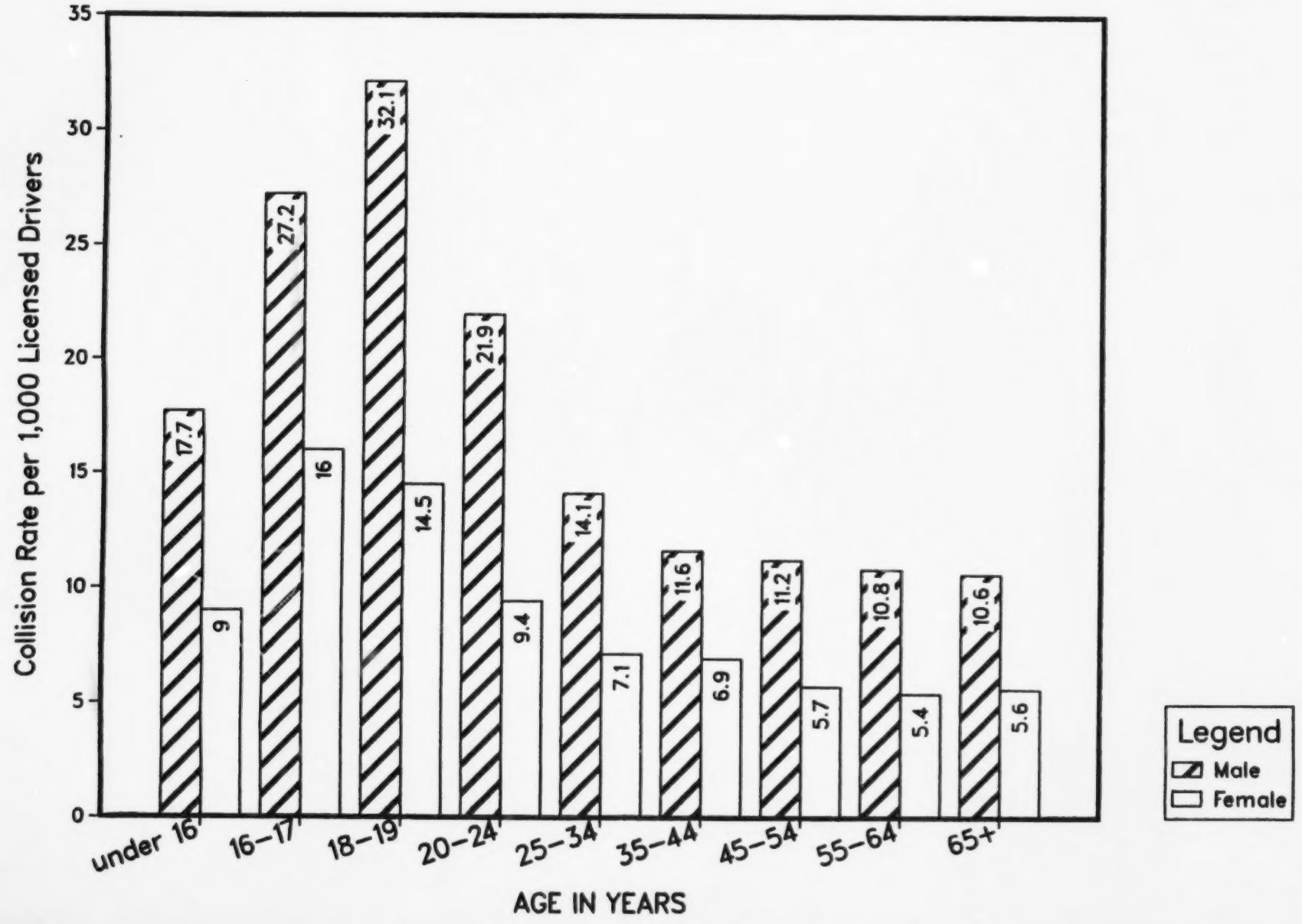


Figure 1

PROVINCIAL TRAFFIC FATALITY RATES
Per 100 Million Vehicle Kilometres Travelled
1985

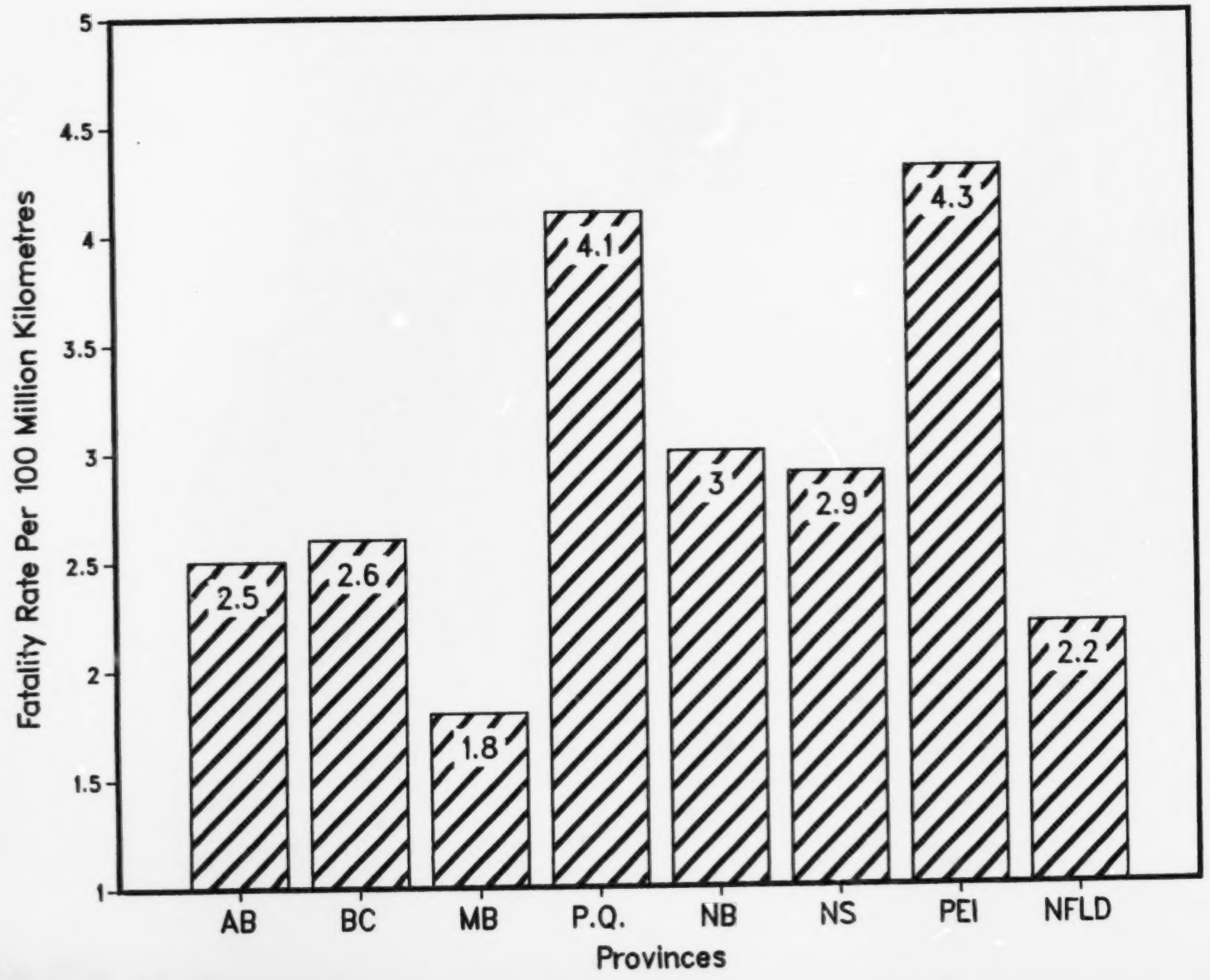


Figure 2

WHEN THE COLLISIONS OCCURRED

MONTH

- The summer months experienced more casualty collisions than any other season. The highest number of property damage only collisions was recorded during the winter months.

DAY OF WEEK

- The daily distribution of collisions indicated that Friday and Saturday were the most collision - prone days of the week.

TIME

- The afternoon rush hour period (3 p.m. - 6:59 p.m.) accounted for the highest proportion of collisions. The least collision - prone time period was the early morning (3 a.m. - 6:59 a.m.)

HOLIDAYS

- The holiday weekends in the summer and fall months recorded more individuals killed or injured in traffic collisions than any other holiday period. Specifically, the 1985 Canada Day "weekend" recorded the highest total number of deaths and injuries.

Table 2.1

COLLISION OCCURRENCE BY MONTH
1985

MONTH	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Only Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
January	29	6.7	875	6.9	7471	8.8	8375	8.5
February	21	4.9	911	7.2	8072	9.5	9004	9.2
March	25	5.8	816	6.4	6002	7.0	6843	7.0
April	24	5.6	840	6.6	5281	6.2	6145	6.2
May	46	10.6	1089	8.6	5503	6.5	6638	6.7
June	62	14.4	1159	9.1	5993	7.0	7214	7.3
July	42	9.7	1328	10.4	6068	7.1	7438	7.6
August	39	9.0	1301	10.2	6314	7.4	7654	7.8
September	36	8.3	1076	8.5	6531	7.7	7643	7.8
October	47	10.9	1189	9.3	7541	8.8	8777	8.9
November	30	6.9	1103	8.7	11193	13.1	12326	12.5
December	31	7.2	1044	8.2	9231	10.8	10306	10.5
Unspecified	0	0.0	2	0.0	24	0.0	26	0.0
TOTAL	**432**	**100.0**	**12733**	**100.0**	**85224**	**100.0**	**98389**	**100.0**

OBSERVATIONS

The summer months (June - August) experienced more fatal and injury collisions than any other season. The highest number of property damage only collisions was reported in the winter months of November and December.

Table 2.2

COLLISION OCCURRENCE BY
DAY OF WEEK
1985

Day of Week	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Only Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
Monday	49	11.3	1614	12.7	11361	13.3	13024	13.2
Tuesday	53	12.3	1714	13.5	12063	14.2	13830	14.1
Wednesday	54	12.5	1618	12.7	11713	13.7	13385	13.6
Thursday	56	13.0	1818	14.3	13107	15.4	14981	15.2
Friday	73	16.9	2257	17.7	15286	17.9	17616	17.9
Saturday	80	18.5	2142	16.8	13263	15.6	15485	15.7
Sunday	67	15.5	1570	12.3	8431	9.9	10068	10.2
TOTAL	**432**	**100.0**	**12733**	**100.0**	**85224**	**100.0**	**98389**	**100.0**

OBSERVATIONS

The daily distribution of collisions indicated that Friday was the most collision-prone day of the week, followed by Saturday and Thursday. Weekdays (Monday to Wednesday) were similar to each other in terms of collision totals, while Sunday was the least collision-prone day of the week.

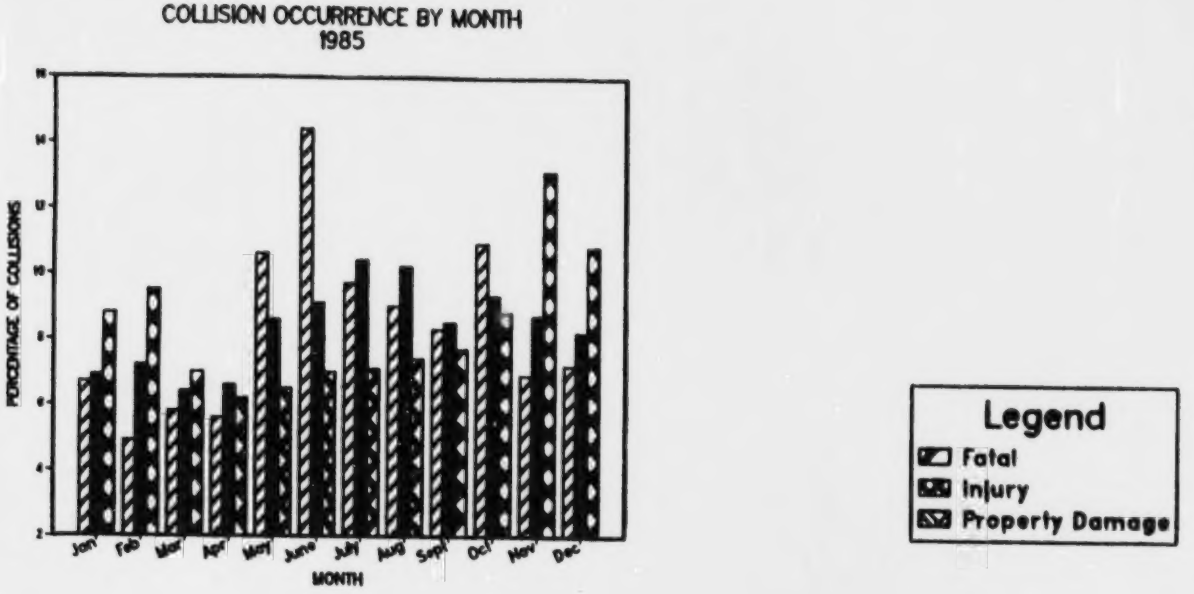
TABLE 2.3

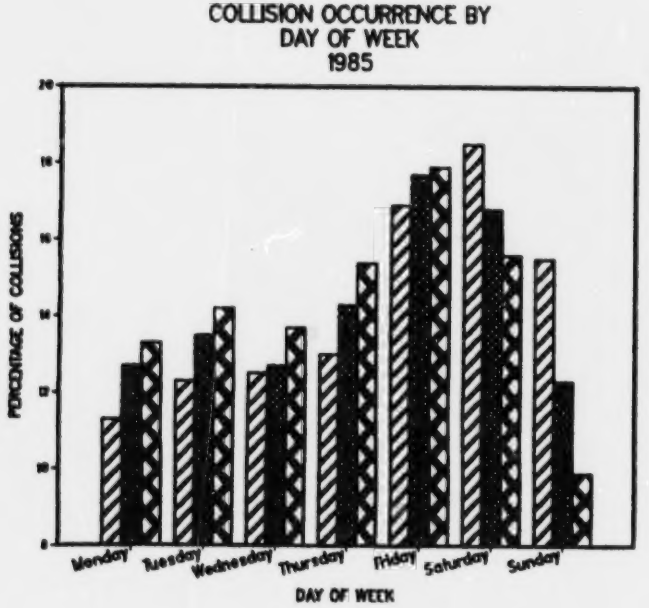
COLLISION OCCURRENCE BY TIME PERIODS 1985

Time Period	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Only Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
11:00 P.M. - 2:59 A.M.	80	18.5	1539	12.1	8229	9.7	9848	10.0
3:00 A.M. - 6:59 A.M.	39	9.0	738	5.8	3369	4.0	4146	4.2
7:00 A.M. - 10:59 A.M.	63	14.6	1974	15.5	14539	17.1	16576	16.8
11:00 A.M. - 2:59 P.M.	59	13.7	2600	20.4	20964	24.6	23623	24.0
3:00 P.M. - 6:59 P.M.	106	24.5	3432	27.0	22490	26.4	26028	26.5
7:00 P.M. - 10:59 P.M.	83	19.2	2227	17.5	13897	16.3	16207	16.5
Unspecified	2	0.5	223	1.8	1736	2.0	1961	2.0
TOTAL	**432**	**100.0**	**12733**	**100.0**	**85224**	**100.0**	**98389**	**100.0**

OBSERVATIONS

The afternoon rush hour period (3:00 P.M. - 6:59 P.M.) accounted for 26.5% of all collisions occurring in a 24 hour period. The least collision - prone time period was the early morning (3:00 A.M. - 6:59 A.M.).


COLLISION OCCURRENCE BY MONTH
1985
PERCENTAGE OF COLLISIONS
Jan
Feb
Mar
Apr
May
June
July
Aug
Sept
Oct
Nov
Dec
MONTH
Legend
Fatal
Injury
Property Damage


COLLISION OCCURRENCE BY
DAY OF WEEK
1985
PERCENTAGE OF COLLISIONS
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
DAY OF WEEK

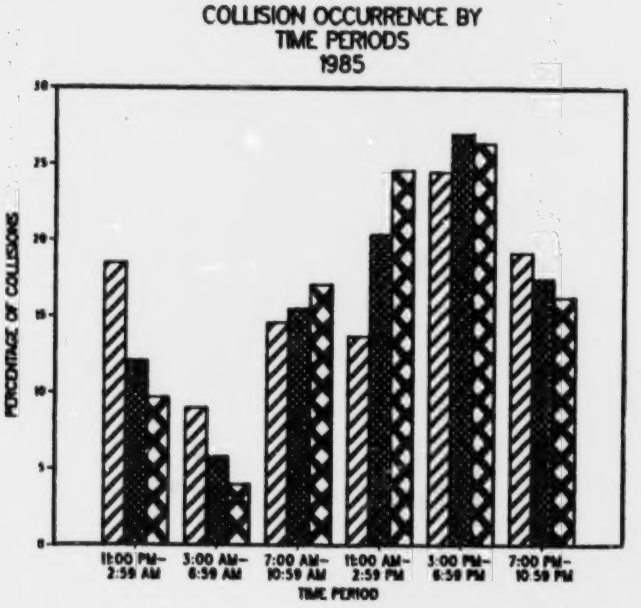

COLLISION OCCURRENCE BY
TIME PERIODS
1985
PERCENTAGE OF COLLISIONS
11:00 PM-
2:59 AM
3:00 AM-
6:59 AM
7:00 AM-
10:59 AM
11:00 AM-
2:59 PM
3:00 PM-
6:59 PM
7:00 PM-
10:59 PM
TIME PERIOD

Figure 3

Table 2.4

CASUALTY COLLISIONS DURING 1985 HOLIDAYS

Holidays	Number Killed		Number Injured		TOTAL* COLLISIONS	
	N	%	N	%	N	%
New Year's Day (January 1)	3	4.7	37	1.9	304	3.7
Easter (April 5 - 8)	4	6.3	119	6.1	589	7.2
Victoria Day (May 17 - 20)	15	23.4	297	15.2	832	10.2
Canada Day (June 28 - July 1)	10	15.6	322	16.5	962	11.7
August Long Weekend (August 2 - 5)	10	15.6	316	16.2	862	10.5
Labour Day (August 30 - September 2)	3	4.7	264	13.5	932	11.4
Thanksgiving Day (October 11 - 14)	13	20.3	264	13.5	914	11.2
Remembrance Day (November 8 - 11)	4	6.3	176	9.0	1663	20.3
Christmas Season (December 23 - 27)	2	3.1	157	8.0	1135	13.9
TOTAL	64	100.0	1952	100.0	8193	100.0

OBSERVATIONS

The Victoria Day and Thanksgiving Day long weekends recorded the highest number of individuals killed, while the Canada Day and August long weekends recorded the highest number of injuries.

* Includes fatal, injury and property damage only collisions.

VICTIMS

ROAD USER CLASS

- The majority of traffic victims were drivers and passengers of vehicles. Pedestrians and motorcyclists accounted for 5.7% and 5.1% of the casualties, respectively.

AGE OF CASUALTIES

- Casualty rates per population were highest for persons between the ages of 15 and 24. The lowest casualty rates were recorded for children (under 14 years of age) and people over the age of 65.

Table 3.1

INJURIES AND FATALITIES
BY ROAD USER CLASS
1985

Road User Class	Persons Killed		Persons Injured		Total Casualties	
	N	%	N	%	N	%
Drivers	282	52.9	10232	51.5	10514	51.6
Passengers	153	28.7	6961	35.1	7114	34.9
Pedestrians	53	9.9	1112	5.6	1165	5.7
Bicyclists	7	1.3	490	2.5	497	2.4
Motorcyclists	30	5.6	1004	5.1	1034	5.1
Other	6	1.1	30	0.2	36	0.2
Unspecified	2	0.4	26	0.1	28	0.1
TOTAL	533	100.0	19855	100.0	20388	100.0

OBSERVATIONS

The majority of traffic victims were drivers and passengers of vehicles. Pedestrians and motorcyclists accounted for (5.7%) and (5.1%) of the casualties, respectively.

TABLE 3.2

AGE OF PERSONS INVOLVED
IN CASUALTY COLLISIONS
1985

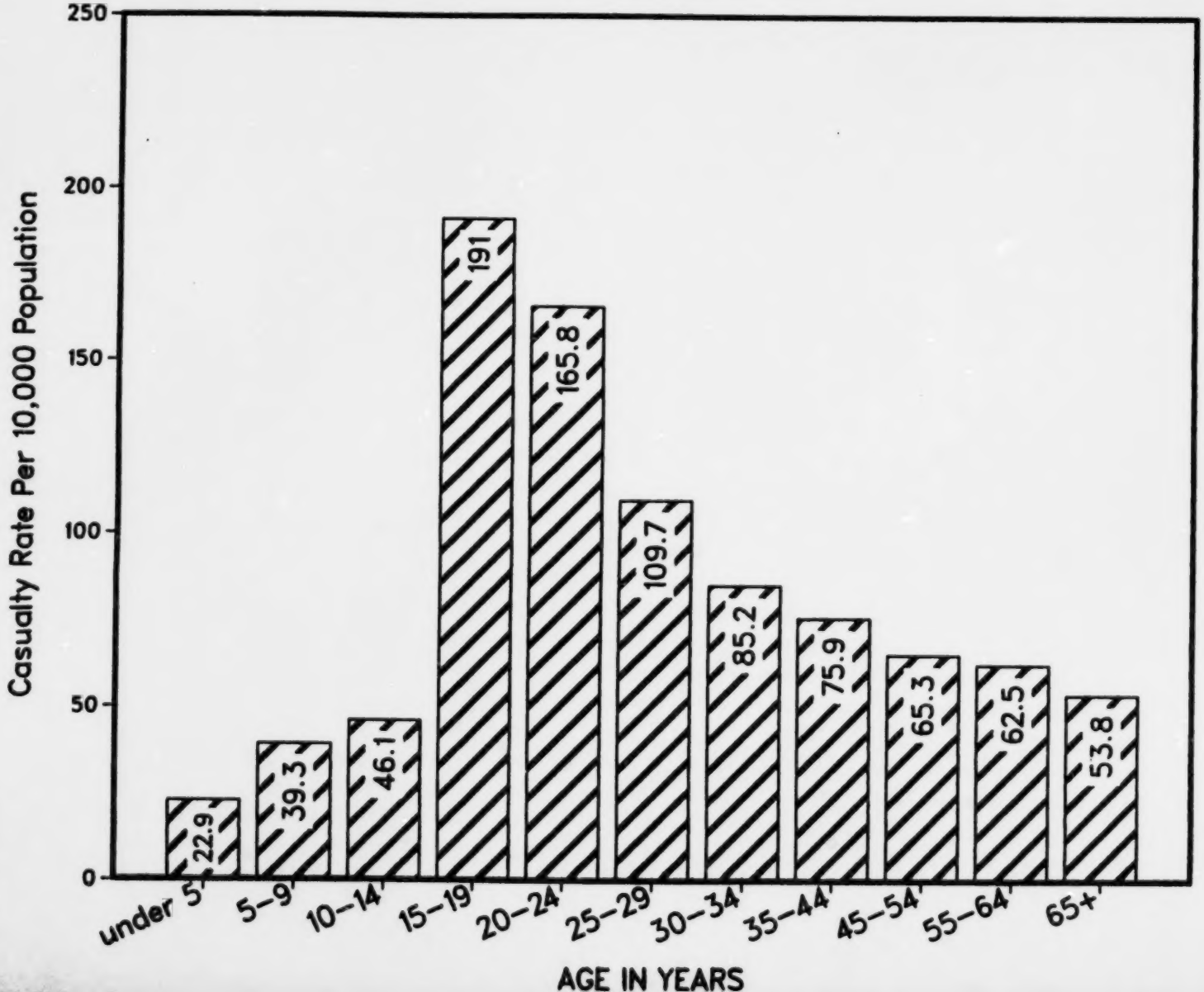
Age in Years	Persons Killed		Persons Injured		Casualty Rate Per 10,000 Population *
	N	%	N	%	
Under 5	10	1.9	473	2.4	22.9
5 - 9	13	2.4	687	3.5	39.3
10 - 14	14	2.6	765	3.9	46.1
15 - 19	94	17.6	3478	17.5	191.0
20 - 24	88	16.5	3809	19.2	165.8
25 - 29	74	13.9	2766	13.9	109.7
30 - 34	43	8.1	1857	9.4	85.2
35 - 44	60	11.3	2345	11.8	75.9
45 - 54	32	6.0	1353	6.8	65.3
55 - 64	47	8.8	1035	5.2	62.5
65 and over	58	10.9	938	4.7	53.8
Unspecified	0	0.0	349	1.8	-
TOTAL	533	100.0	19855	100.0	

OBSERVATIONS

Casualty rates per population were highest for persons between the ages of 15 and 24. The lowest casualty rates were recorded for children (under 14 years of age) and people over the age of 65.

* Based on postcensal estimates of the population by sex and age. Canada and Provinces, 1985. Statistics Canada.

AGE OF CASUALTIES
CASUALTY RATE PER 10,000 POPULATION
1985



DRIVER COMPONENT

AGE AND SEX OF DRIVERS

- Overall casualty collision rates per licensed driver indicated that 18-19 year olds were more likely to be involved in a traffic collision than any other age group. The next age group most likely to be involved in serious collisions were 16 to 17 year olds. Drivers over the age of 55 were least likely to be involved in a casualty collision.

DRIVER ACTIONS

- Driver error or misjudgement was involved in approximately 55% of casualty collisions. Running off the road and travelling at an unsafe speed were the most frequent driver actions contributing to casualty collisions.

Table 4.1

AGE AND SEX OF DRIVERS INVOLVED IN CASUALTY COLLISIONS: PER 1,000 LICENSED DRIVERS
1985

	MALES			FEMALES			TOTAL*		
Age of Driver	N	%	Per 1000** Licensed Drivers	N	%	Per 1000** Licensed Drivers	N	%	Per 1000** Licensed Drivers
Under 16	288	1.3	17.7	95	0.4	9.0	385	1.8	14.4
16 - 17	837	3.9	27.2	391	1.8	16.0	1229	5.7	22.3
18 - 19	1223	5.7	32.1	466	2.2	14.5	1692	7.9	24.1
20 - 24	3233	15.1	21.9	1161	5.4	9.4	4405	20.5	16.3
25 - 34	4495	21.0	14.1	1805	8.4	7.1	6312	29.4	11.0
35 - 44	2192	10.2	11.6	1075	5.0	6.9	3277	15.3	9.5
45 - 54	1320	6.2	11.2	508	2.4	5.7	1834	8.6	9.0
55 - 64	947	4.4	10.8	325	1.5	5.4	1274	5.9	8.6
65 and over	679	3.2	10.6	198	0.9	5.6	879	4.1	8.8
Unspecified	122	0.6	-	39	0.2	-	161	0.8	-
TOTAL	15336	71.5		6063	28.3		21448	100.0	

Table 4.2

ACTIONS OF DRIVERS INVOLVED IN CASUALTY COLLISIONS* 1985

DRIVER ACTION	FATAL COLLISIONS		NON-FATAL INJURY COLLISIONS		TOTAL CASUALTY COLLISIONS	
	N	%	N	%	N	%
Driving Properly	248	40.1	8937	45.4	9185	45.2
Ran Off Road	71	11.5	1704	8.6	1775	8.7
Unsafe Speed	56	9.1	1195	6.1	1251	6.1
Failing to Observe Traffic Control Device	24	3.9	1192	6.1	1216	6.0
Failing to Yield Right-of-Way	29	4.7	1081	5.5	1110	5.4
Left Turn Across Path	18	2.9	1033	5.2	1051	5.2
Following Too Closely	3	0.5	907	4.6	910	4.5
Entering Lane When Unsafe	7	1.1	301	1.5	308	1.5
Left of Centre	80	12.9	340	1.7	420	2.1
Improper Turn	2	0.3	295	1.5	297	1.5
Improper Passing	9	1.5	156	0.8	165	0.8
Backing Unsafely	1	0.2	121	0.6	122	0.6
Failing to Signal	0	0.0	14	0.1	14	0.1
Other	70	11.3	2425	12.3	2495	12.3
TOTAL	**618**	**100.0**	**19701**	**100.0**	**20319**	**100.0**

OBSERVATIONS

Driver error or misjudgement was involved in 54.8% of casualty collisions. Running off the road, unsafe speed and failing to observe traffic control device were the most frequently identified driver actions contributing to casualty collisions.

* Includes only those cases where driver action was specified on the collision report form.

VEHICLE COMPONENT

TYPES OF VEHICLES

- Passenger cars and pick up trucks/vans were the vehicles most frequently involved in casualty collisions. Motorcycles were involved in 4.2% of casualty collisions and trucks 4000 kg and over were involved in 3.3% of casualty collisions.

VEHICULAR FACTORS

- Vehicle defects played a very minor role in casualty collisions. Less than 3% of vehicles involved in these types of collisions were identified as having a vehicle defect. The most common defects involved defective brakes and tire failure.

POINT OF IMPACT

- The most common point of impact in casualty collisions involved the front of the vehicle. Approximately 40% of the impacts involved the centre front.

Table 5.1

TYPES OF VEHICLES INVOLVED IN CASUALTY COLLISIONS *
1985

TYPE OF VEHICLE	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
Passenger Car	300	43.2	13372	62.6	13672	62.0
Pick Up Truck/Van	223	32.1	5051	23.7	5274	23.9
Motorcycle	33	4.7	896	4.2	929	4.2
Truck 4000 Kg+	44	6.3	680	3.2	724	3.3
Tractor Trailer	63	9.1	433	2.0	496	2.3
Bicycle	15	2.2	499	2.3	514	2.3
School Bus	2	0.3	24	0.1	26	0.1
Other Bus	3	0.4	147	0.7	150	0.7
Off Hwy. Vehicle	5	0.7	80	0.4	85	0.4
Farm Equipment	5	0.7	26	0.1	31	0.1
Other	2	0.3	137	0.6	139	0.6
TOTAL NUMBER OF VEHICLES	**695**	**100.0**	**21345**	**100.0**	**22040**	**100.0**

OBSERVATIONS

Passenger cars and pick up trucks/vans were the vehicles most frequently involved in casualty collisions. Motorcycles were involved in 4.2% of casualty collisions and trucks 4000 kg and over were involved in 3.3% of casualty collisions.

* Includes only those cases where type of vehicle was specified on the collision report form.

Table 5.2

VEHICULAR FACTORS
INVOLVED IN CASUALTY COLLISIONS*
1985

VEHICULAR FACTORS	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
No Defect Present	428	93.7	18674	97.4	19102	97.3
Defective Brakes	11	2.4	128	0.7	139	0.7
Tire Failure/Inadequate	4	0.9	101	0.5	105	0.5
Lighting Defect	7	1.5	75	0.4	82	0.4
Other	7	1.5	194	1.0	201	1.0
TOTAL	**457**	**100.0**	**19172**	**100.0**	**19629**	**100.0**

OBSERVATIONS

Vehicle defects played a very minor role in casualty collisions. Less than 3% of vehicles involved in these types of collisions were identified as having a vehicle defect. The most common defects included defective brakes and tire failure.

* Includes only those cases in which a vehicular factor was specified on the collision report form.

Table 5.3

POINT OF IMPACT ON VEHICLES INVOLVED IN CASUALTY COLLISIONS* 1985

POINT OF IMPACT	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
Centre Front	266	39.6	7561	37.7	7827	37.8
Right Front	51	7.6	2086	10.4	2137	10.3
Left Front	95	14.2	2212	11.0	2307	11.1
Right Side	46	6.9	1243	6.2	1289	6.2
Left Side	51	7.6	1185	5.9	1236	6.0
Centre Rear	26	3.9	2424	12.1	2450	11.8
Right Rear	13	1.9	677	3.4	690	3.3
Left Rear	13	1.9	647	3.2	660	3.2
Top	3	0.4	76	0.4	79	0.4
Undercarriage	6	0.9	130	0.6	136	0.7
Rollover	101	15.1	1805	9.0	1906	9.2
TOTAL	**671**	**100.0**	**20046**	**100.0**	**20717**	**100.0**

OBSERVATIONS

The most common point of impact in casualty collisions involved the front of the vehicle. Approximately 40% of the impacts involved the centre front while 10.3% of the impacts involved the right front and 11.1% involved the left front.

* Includes only those cases in which point of impact was specified on the collision report form.

ENVIRONMENTAL COMPONENT

LOCATION

- The majority of fatal crashes occurred in rural areas, whereas, the majority of injury and property damage only crashes occurred in urban areas.

SURFACE CONDITION

- The majority of casualty collisions occurred when surface conditions were dry.

ROAD LOCATION

- Approximately 42% of casualty collisions were non-intersection related. Fatal collisions were less likely to be intersection related than non-fatal injury collisions.

Table 6.1

LOCATION OF COLLISIONS
1985

Location	Fatal Collisions		Non-Fatal Injury Collisions		Property Only Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
Urban	114	26.4	8782	69.0	69597	81.7	78493	79.8
Rural	311	72.0	3655	28.7	14259	16.7	18225	18.5
Unspecified	7	1.6	296	2.3	1368	1.6	1671	1.7
TOTAL	**432**	**100.0**	**12733**	**100.0**	**85224**	**100.0**	**98389**	**100.0**

OBSERVATIONS

Collisions which occurred in rural areas accounted for 72.0% of all fatal crashes. Collisions occurring in urban areas resulted in the highest proportion of non-fatal injury collisions (69.0%) and property damage only crashes (81.7%).

For the purpose of this report "urban" refers to any area within the corporate boundaries of a city, town, or village. "Rural" is any area outside such boundaries.

Table 6.2

CASUALTY COLLISION OCCURRENCE
BY SURFACE CONDITION
1985

Surface Condition	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
Dry	260	60.2	6889	54.1	7149	54.3
Wet	42	9.7	1447	11.4	1489	11.3
Loose Material	29	6.7	782	6.1	811	6.2
Snow/Ice	78	18.1	2881	22.6	2959	22.5
Other	3	0.7	34	0.3	37	0.3
Unspecified	20	4.6	700	5.5	720	5.5
TOTAL	**432**	**100.0**	**12733**	**100.0**	**13165**	**100.0**

OBSERVATIONS

The majority of casualty collisions occurred when surface conditions were dry. Snow and ice were involved in 18.1% of fatal collisions and 22.6% of non-fatal injury collisions.

Table 6.3

ROAD LOCATION OF CASUALTY COLLISIONS
1985

Road Location	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
Intersection-Related	116	26.9	5851	46.0	5967	45.3
Non-Intersection Related	245	56.7	5384	42.3	5629	42.8
Off Highway	30	6.9	433	3.4	463	3.5
At/Near Private Drive to Residence	25	5.8	368	2.9	393	3.0
Parking Lot	2	0.5	255	2.0	257	2.0
At/Near Commercial Entrance	5	1.2	221	1.7	226	1.7
At/Near Service Road	3	0.7	123	1.0	126	1.0
At/Near Railroad Crossing	4	0.9	63	0.5	67	0.5
Unspecified	2	0.5	35	0.3	37	0.3
TOTAL Collisions	**432**	**100.0**	**12733**	**100.0**	**13165**	**100.0**

OBSERVATIONS

Approximately 42.3% of casualty collisions were non-intersection related. Fatal collisions were less likely to be intersection related (26.9%) than non-fatal injury collisions (46.0%).

SPECIAL TYPES OF VEHICLES

MOTORCYCLES

- Fatal motorcycle collision rates based on motorcycle registrations increased slightly since 1984. The involvement rate for non-fatal injury collisions has also risen.

- The majority of motorcycle casualty collisions involved male drivers. Motorcycle drivers under the age of 25 were the age group most likely to be involved in these collisions. This was especially true for 16 and 17 year old drivers. Their involvement rate per 1,000 licenced drivers is 79.6, over twice that of the 18 and 19 year olds (36.7).

- Compared to drivers involved in other types of vehicle collisions, motorcycle drivers were less likely to fail to yield right-of-way, fail to observe a traffic control device or make a left turn across the path of an oncoming vehicle. However motorcycle drivers were more likely to drive at an unsafe speed, run off the road, or pass improperly.

- Compared to drivers involved in other types of vehicle casualty collisions, motorcycle drivers were more likely to have consumed alcohol before the crash.

- Vehicular factors were involved in 3.6% of motorcycle casualty collisions compared to 2.7% of casualty collisions involving other types of vehicles.

- The majority of casualty collisions involving motorcycles occurred on dry roads.

TRACTOR TRAILERS

- In 1985, there were 86 persons killed and 646 injured in collisions involving tractor trailers. This represents a 4.6% increase in casualties since 1984.

- Compared to drivers of other vehicles, tractor trailer drivers were more likely to run off the road.

- Tractor trailer drivers were less likely to consume alcohol before the crash than were drivers of other types of collision - involved vehicles.

- Vehicular factors were more likely to be present in tractor trailer casualty collisions than in casualty collisions involving other types of vehicles. In particular, tractor trailers were more likely to be identified as having defective brakes than other vehicle types.

- The occurrences of casualty collisions involving tractor trailers were highest in the months of July and December.

TRAINS

- In 1985, 6 people were killed and 41 people were injured in crashes in which a train was involved. The number of casualties involving trains decreased slightly since 1984.

- The majority of casualty collisions involving trains occurred in the winter months from December to February.

- Approximately 11.4% of drivers involved in a train crash were driving properly. A large percentage of drivers either failed to observe the traffic control device (42.9%) or failed to yield right-of-way to the train (20.0%).

Table 7.1

CASUALTY COLLISIONS INVOLVING MOTORCYCLES
1981 - 1985

	1985	1984	1983	1982	1981
Number of Motorcycles					
Fatal	33	26	39	43	50
Non-Fatal Injury	896	873	981	1109	1225
TOTAL	**929**	**899**	**1020**	**1152**	**1275**
Casualties *					
Number Killed	32	27	44	43	49
Number Injured	1099	1030	1197	1320	1558
TOTAL CASUALTIES	**1131**	**1057**	**1241**	**1363**	**1607**
Number of Motorcycles Involved in Serious Collisions Per 10,000 Registered Motorcycles **					
Fatal Collisions	5.5	4.4	6.6	7.2	9.0
Non-Fatal Injury Collisions	150.2	147.9	165.5	185.1	220.2

OBSERVATIONS

Fatal motorcycle collision rates based on motorcycle registrations has been decreasing steadily since 1981; however they rose in the past year. The involvement rate for non-fatal injury collisions has followed the same pattern.

* This refers to the number of people killed and injured in collisions in which a motorcycle was involved. It does not refer to the number of motorcyclists killed and injured.

** Source: Based on vehicle registration statistics, Motor Vehicles Division, Alberta Solicitor General, March 31, 1985.

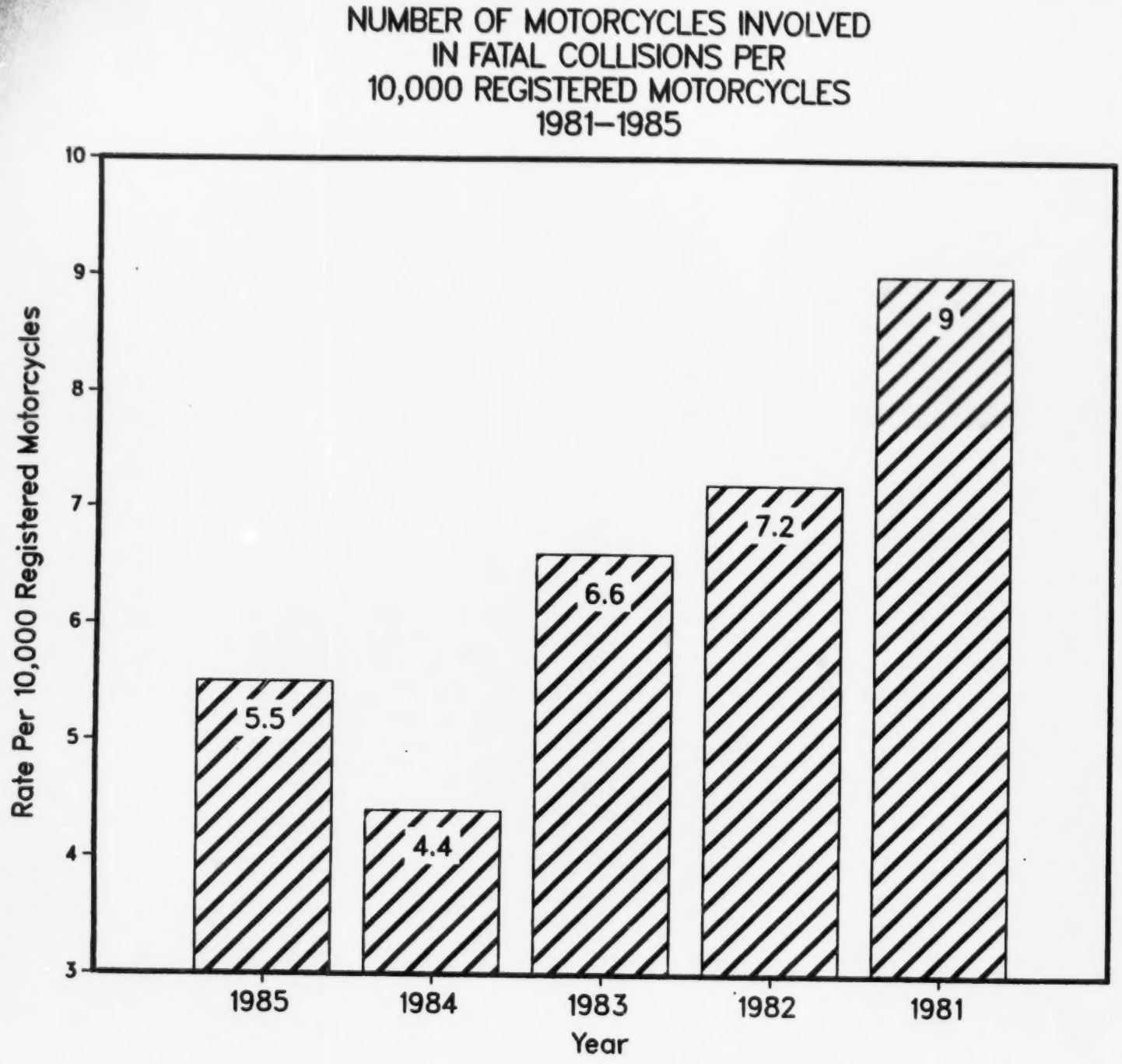

NUMBER OF MOTORCYCLES INVOLVED
IN FATAL COLLISIONS PER
10,000 REGISTERED MOTORCYCLES
1981–1985
Rate Per 10,000 Registered Motorcycles
10
9
8
7
6
5
4
3
5.5
4.4
6.6
7.2
9
1985
1984
1983
1982
1981
Year

Figure 6

Table 7.2

AGE AND SEX OF MOTORCYCLE DRIVERS INVOLVED IN CASUALTY COLLISIONS * 1985

Age of Driver	Male		Female		Total		Per 1,000 Licensed Motorcyclists **
	N	%	N	%	N	%	
Under 16	32	3.6	4	9.8	36	3.9	—
16 - 17	89	10.1	5	9.8	94	10.1	79.6
18 - 19	119	13.5	2	4.9	121	13.1	36.7
20 - 24	269	30.6	16	39.0	285	30.9	12.7
25 - 34	280	31.9	9	22.0	289	31.4	3.9
35 - 44	65	7.4	4	9.8	69	7.5	2.3
45 - 54	12	1.4	2	4.9	14	1.6	1.4
55 - 64	9	1.0	0	0.0	9	1.0	2.0
65 and over	4	0.5	0	0.0	4	0.4	3.7
TOTAL	**879**	**100.0**	**42**	**100.0**	**921**	**100.0**	

OBSERVATIONS

The majority of motorcycle casualty collisions involved male drivers. Motorcycle drivers under the age of 25 were the age group most likely to be involved in collisions. This was especially true for 16 and 17 year old drivers. Their involvement rate per 1,000 licensed drivers (79.6) is over twice that of the next most involved group, 18-19 year olds (36.7). The age group least likely to be involved in collisions were drivers 45-54 years of age. These age and sex comparisons are limited due to the lack of driving exposure data. That is, in order to make valid age comparisons, it is important to take into account the number of kilometres driven annually by each age and sex group of motorcycle operators.

* Includes only drivers whose age and sex was specified on the collision report form.
** Source: Alberta Solicitor General - Motor Vehicles Division. Operator Statistics, May 31, 1985.

Table 7.3

CASUALTY COLLISIONS
INVOLVING MOTORCYCLES:
DRIVER ACTION*
1985

DRIVER ACTION	Motorcycle Collisions		Total Casualty Collisions (All Vehicle Types)
	N	%	%
Driving Properly	375	43.8	45.2
Unsafe Speed	118	13.8	6.1
Ran Off Road	100	11.7	8.7
Following Too Closely	27	3.2	4.5
Improper Passing	24	2.8	0.8
Failing to Yield Right-of-Way	16	1.9	5.4
Failing to Observe Traffic Control Device	22	2.6	6.0
Improper Turn	4	0.5	1.5
Left Turn Across Path	16	1.9	5.2
Left of Centre	13	1.5	2.1
Entering Lane When Unsafe	9	1.1	1.5
Backing Unsafely	1	0.1	0.6
Other	131	15.3	12.3
TOTAL	**856**	**100.0**	

OBSERVATIONS

Improper driver actions were a contributory factor for 54.8% of the motorcyclists involved in casualty collisions. Compared to drivers involved in other types of vehicle casualty collisions, motorcycle drivers were more likely to drive at an unsafe speed, run off the road, or pass improperly. However, motorcycle drivers were less likely to fail to yield right-of-way, fail to observe a traffic control device or make a left turn across the path of an oncoming vehicle.

* Based only on cases where driver action was specified on the collision report form.

Table 7.4

CASUALTY COLLISIONS
INVOLVING MOTORCYCLES:
DRIVER CONDITION *
1985

DRIVER CONDITION	Motorcycle Collisions		Total Casualty Collisions (All Vehicle Types)
	N	%	%
Normal	705	82.3	86.6
Had Been Drinking	121	14.1	7.9
Alcohol Impaired	29	3.4	4.3
Other	2	0.2	1.2
TOTAL	**857**	**100.0**	

OBSERVATIONS

The motorcycle driver's condition was a contributory factor for 17.7% of these crashes. However, compared to drivers involved in other types of vehicle casualty collisions, motorcycle drivers were more likely to have consumed alcohol before the crash.

* Based only on cases where driver condition was specified on the collision report form.

Table 7.5

CASUALTY COLLISIONS
INVOLVING MOTORCYCLES:
VEHICULAR FACTORS*
1985

VEHICULAR FACTORS	Motorcycle Collisions		Total Casualty Collisions (All Vehicle Types)
	N	%	%
No Defect Present	821	96.4	97.3
Tire Failure/Inadequate	10	1.2	0.5
Defective Brakes	6	0.7	0.7
Lighting Defect	3	0.4	0.4
Other	12	1.4	1.0
TOTAL	852	100.0	

OBSERVATIONS

Vehicular factors were involved in 3.6% of motorcycle casualty collisions, compared to 2.7% in casualty collisions involving other types of vehicles. In particular, motorcycles were twice as likely as other vehicle types to experience tire failure.

* Based only on cases where a vehicular factor was specified on the collision report form.

Table 7.6

CASUALTY COLLISIONS
INVOLVING MOTORCYCLES:
MONTH OF OCCURRENCE
1985

MONTH	N	%
January	1	0.1
February	4	0.4
March	33	3.6
April	75	8.3
May	156	17.2
June	159	17.5
July	176	19.4
August	170	18.8
September	67	7.4
October	57	6.3
November	8	0.9
December	0	0.0
TOTAL	**906**	**100.0**

OBSERVATIONS

The months of July and August recorded the highest proportion of casualty crashes involving motorcycles.

Table 7.7

CASUALTY COLLISIONS
INVOLVING MOTORCYCLES:
ROAD SURFACE CONDITION*
1985

ROAD SURFACE CONDITION	N	%
Dry	731	86.2
Loose Material	58	6.8
Wet	44	5.2
Snow/Ice	6	0.7
Other	9	1.1
TOTAL	**848**	**100.0**

OBSERVATIONS

The majority of casualty collisions involving motorcycles occurred on dry roads. However, 6.8% of the collisions occurred on road surfaces covered with loose material. Wet road surfaces were involved in 5.2% of motorcycle casualty crashes.

* Based only on collisions where road surface condition was specified on the collision report form.

Table 7.8

CASUALTY COLLISIONS INVOLVING TRACTOR TRAILERS
1981-1985

Number of Tractor Trailers	1985 N	1984 N	1983 N	1982 N	1981 N
Fatal	63	47	27	54	65
Non-Fatal Injury	433	422	384	454	527
TOTAL	**496**	**469**	**411**	**508**	**592**
Casualties *					
Number Killed	86	54	34	69	85
Number Injured	646	646	528	641	731
TOTAL CASUALTIES	**732**	**700**	**562**	**710**	**816**
Proportion of Total Involved Vehicles					
Fatal Collisions	9.1	7.8	4.8	7.8	7.1
Non-Fatal Injury Collisions	2.0	2.1	1.8	1.8	1.9

OBSERVATIONS

In 1985, there were 86 persons killed and 646 injured in collisions involving tractor trailers. This represents a 4.6% increase in casualties from 1984. The number of tractor trailers involved in casualty collisions has increased by 5.8%. The involvement rate of tractor trailers in fatal collisions rose in 1984 and 1985. The proportional involvement of tractor trailers in injury collisions dropped slightly in 1985, but has basically remained stable over the past five years.

* This refers to the number of people killed and injured in collisions in which a tractor trailer was involved. It does not refer to the number of tractor trailer drivers killed and injured.

Table 7.9

CASUALTY COLLISIONS
INVOLVING TRACTOR-TRAILERS:
DRIVER ACTION*
1985

DRIVER ACTION	Tractor-Trailer Collisions		Total Casualty Collisions (All Vehicle Types)
	N	%	%
Driving Properly	240	53.5	45.2
Ran Off Road	56	12.5	8.7
Unsafe Speed	20	4.5	6.2
Failed to Observe Traffic Control Device	16	3.6	6.0
Following Too Closely	19	4.2	4.5
Left of Centre	7	1.5	2.1
Failing to Yield Right-of-Way	11	2.4	5.5
Left Turn Across Path	7	1.5	5.2
Improper Turn	6	1.3	1.5
Improper Passing	4	0.9	0.8
Entering Lane When Unsafe	3	0.7	2.1
Backing Unsafely	3	0.7	0.6
Failing to Signal	1	0.2	0.1
Other	56	12.5	12.3
TOTAL	449	100.0	

OBSERVATIONS

Improper driver actions were exhibited by 46.5% of the tractor trailer drivers involved in casualty collisions. Compared to drivers of other vehicles, tractor trailer drivers were more likely to run off the road. However, operators of tractor trailers were less likely than other vehicle operators to make an unsafe left turn, fail to yield the right-of-way, drive at an unsafe speed, or fail to observe traffic control devices.

* Based only on those cases where driver action was specified on the collision report form.

Table 7.10

CASUALTY COLLISIONS
INVOLVING TRACTOR-TRAILERS:
DRIVER CONDITION*
1985

DRIVER CONDITION	Tractor-Trailer Collisions		Total Casualty Collisions (All Vehicle Types)
	N	%	%
Normal	429	96.4	86.6
Had Been Drinking	6	1.3	7.9
Alcohol Impaired	6	1.3	4.3
Other	4	0.9	1.2
TOTAL	445	100.0	

OBSERVATIONS

The condition of the tractor trailer driver was a contributory factor for only 3.5% of the drivers involved. Tractor trailer drivers were less likely to consume alcohol before the crash than were drivers of other types of collision-involved vehicles.

* Based only on cases where driver condition was specified on the collision report form.

Table 7.11

CASUALTY COLLISIONS
INVOLVING TRACTOR-TRAILERS:
VEHICULAR FACTORS*
1985

VEHICULAR FACTORS	Tractor-Trailer Collisions		Total Casualty Collisions (All Vehicle Types)
	N	%	%
No Defect Present	393	92.5	97.3
Defective Brakes	15	3.5	0.7
Lighting Defect	6	1.4	0.4
Tire Failure/Inadequate	2	0.5	0.5
Other	9	2.1	1.0
TOTAL	425	100.0	

OBSERVATIONS

Vehicular factors were involved in 7.5% of casualty collisions. However, vehicular factors were more likely to be present in tractor trailer collisions than in collisions involving other types of vehicles. In particular, tractor trailers were more likely to be identified as having defective brakes than other vehicle types.

* Based only on those cases where vehicular factor was specified on the collison report form.

Table 7.12

CASUALTY COLLISIONS
INVOLVING TRACTOR-TRAILERS:
MONTH OF OCCURRENCE
1985

MONTH	N	%
January	47	10.0
February	38	8.1
March	37	7.9
April	17	3.6
May	37	7.9
June	37	7.9
July	52	11.1
August	42	9.0
September	22	4.7
October	41	8.7
November	43	9.2
December	56	11.9
TOTAL	**469**	**100.0**

OBSERVATIONS

The occurrences of casualty collisions involving tractor trailers was highest in the months of July and December. The lowest number of tractor-trailer casualty collisions occurred during April and September.

Table 7.13

CASUALTY COLLISIONS INVOLVING TRAINS
1981-1985

Number of Trains	1985 N	1984 N	1983 N	1982 N	1981 N
Fatal	5	4	7	9	10
Non-Fatal Injury	30	33	30	32	50
TOTAL	**35**	**37**	**37**	**41**	**60**
Casualties					
Number Killed	6	4	9	11	16
Number Injured	41	44	43	45	111
TOTAL CASUALTIES	**47**	**48**	**52**	**56**	**127**
Proportion of Total Involved Vehicles					
Fatal Collisions	0.7	0.7	1.2	1.3	1.3
Non-Fatal Injury Collisions	0.1	0.2	0.1	0.1	0.2

OBSERVATIONS

The number of trains involved in casualty collisions has been decreasing since 1981. The proportional involvement of trains in casualty crashes has remained relatively stable over the past 2 years.

Table 7.14

CASUALTY COLLISIONS INVOLVING TRAINS:
MONTH OF OCCURRENCE
1985

MONTH	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
January	0	0.0	6	20.0	6	17.1
February	0	0.0	5	16.7	5	14.3
March	1	20.0	3	10.0	4	11.4
April	0	0.0	1	3.3	1	2.9
May	0	0.0	3	10.0	3	8.6
June	0	0.0	1	3.3	1	2.9
July	1	20.0	3	10.0	4	11.4
August	0	0.0	1	3.3	1	2.9
September	0	0.0	2	6.7	2	5.7
October	1	20.0	1	3.3	2	5.7
November	1	20.0	0	0.0	1	2.9
December	1	20.0	4	13.3	5	14.3
TOTAL	5	100.0	30	100.0	35	100.0

OBSERVATIONS

The majority of casualty collisions involving trains occurred in the winter months from December to February.

Table 7.15

CASUALTY COLLISIONS INVOLVING TRAINS:
DRIVER ACTION
1985

DRIVER ACTION	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
Driving Properly	0	0.0	4	13.3	4	11.4
Failed to Observe Traffic Control Device	2	40.0	13	43.3	15	42.9
Failed to Yield Right-of-Way	2	40.0	5	16.7	7	20.0
Unsafe Speed	0	0.0	2	6.7	2	5.7
Left Turn Across Path	1	20.0	0	0.0	1	2.9
Other	0	0.0	6	2.0	6	17.1
TOTAL	**5**	**100.0**	**30**	**100.0**	**35**	**100.0**

OBSERVATIONS

Only 11.4% of drivers involved in a train crash were driving properly. A large percentage of drivers either failed to observe the traffic control device (42.9%) or failed to yield right-of-way to the train (20.0%).

PEDESTRIANS

- Pedestrian casualty collisions were fairly evenly distributed across all months of the year. December accounted for the largest number of collisions, while July experienced the least number of crashes.

- Pedestrian casualty collisions were most likely to occur on Fridays and least likely to occur on Sundays.

- Pedestrian casualty collisions were most likely to occur during the evening rush-hour period.

- Drivers failed to yield the right-of-way to pedestrians in 31.1% of the collisions.

- The casualty rate per population was highest for pedestrians between the ages of 5 and 19.

Table 8.1

PEDESTRIAN CASUALTY COLLISIONS:
MONTH OF OCCURRENCE
1985

	N	%
Month of Collision		
January	78	7.7
February	83	8.2
March	83	8.2
April	78	7.7
May	87	8.6
June	85	8.4
July	72	7.1
August	78	7.7
September	91	9.0
October	93	9.2
November	86	8.5
December	99	9.8
TOTAL	**1013**	**100.0**

OBSERVATIONS

Pedestrian casualty collisions were fairly evenly distributed across all months of the year. December accounted for the largest number of collisions, while July experienced the least number of crashes.

Table 8.2

PEDESTRIAN CASUALTY COLLISIONS:
DAY OF OCCURRENCE
1985

DAY OF WEEK	N	%
Monday	133	13.1
Tuesday	152	15.0
Wednesday	133	13.1
Thursday	172	17.0
Friday	208	20.5
Saturday	141	13.9
Sunday	74	7.3
TOTAL	1013	100.0

OBSERVATIONS

Pedestrian casualty collisions were most likely to occur on Fridays and least likely to occur on Sundays.

Table 8.3

PEDESTRIAN CASUALTY COLLISIONS:
TIME PERIOD
1985

TIME PERIOD	N	%
11:00 P.M. - 2:59 A.M.	92	9.4
3:00 A.M. - 6:59 A.M.	26	2.7
7:00 A.M. - 10:59 A.M.	138	11.7
11:00 A.M. - 2:59 P.M.	223	22.9
3:00 P.M. - 6:59 P.M.	319	32.7
7:00 P.M. - 10:59 P.M.	201	20.6
Unspecified	14	
TOTAL	975	100.0

OBSERVATIONS

Pedestrian casualty collisions were most likely to occur during the evening rush-hour period from 3:00 P.M. to 6:59 P.M. These collisions were least likely to occur during the early morning hours.

Table 8.4

PEDESTRIAN CASUALTY COLLISIONS:
LOCATION
1985

LOCATION	N	%
Urban	937	92.5
Rural	52	5.1
Unspecified	24	2.4
TOTAL	1013	100.0

OBSERVATIONS

The majority of pedestrian casualty collisions (94.7%) occurred in urban areas. Only 5.3% occurred in rural areas.

Table 8.5

PEDESTRIAN CASUALTY COLLISIONS: DRIVER ACTION * 1985

Driver Action	N	%	Total Casualty Collisions (All Collision Types) %
Driving Properly	484	54.8	45.2
Failing to Yield Right of Way	270	30.6	5.4
Backing Unsafely	38	4.3	0.6
Failing to Observe Traffic Control Device	18	2.0	6.0
Unsafe Speed	31	3.5	6.1
Improper Passing	12	1.4	0.8
Ran Off Road	7	0.8	8.7
Improper Turn	8	0.9	1.5
Pedestrian Action			
Pedestrian Error/Violation	15	1.7	
TOTAL	**883**	**100.0**	

OBSERVATIONS

Over half (55.8%) of the collisions involving pedestrians involved no improper driver actions. However, compared to total casualty collisions, drivers involved in pedestrian casualty collisions were nearly six times as likely to fail to yield right of way (30.6%). Pedestrian error was responsible for only 1.7% of these crashes.

* Based only on those cases where a driver action was specified on the collision report form.

Table 8.6

AGE OF PEDESTRIAN CASUALTIES 1985

Age in Years	Number Killed	Number Injured	Total Casualties		Casualty Rate Per 10,000 Population *
			N	%	
Under 5	3	53	56	4.8	2.7
5 - 9	3	137	140	12.0	7.9
10 - 14	1	126	127	10.9	7.5
15 - 19	7	132	139	11.9	7.4
20 - 24	3	121	124	10.6	5.3
25 - 29	4	110	114	9.8	4.4
30 - 34	4	89	93	8.0	4.2
35 - 44	8	92	100	8.6	3.2
45 - 54	3	64	67	5.8	3.2
55 - 64	4	70	74	6.4	4.3
65 and over	13	101	114	9.8	6.2
Unspecified	0	17	17	1.5	
TOTAL	**53**	**1112**	**1165**	**100.0**	

OBSERVATIONS

The casualty rate per population was highest for pedestrians between the ages of 5 and 19. In particular, pedestrians aged 5 to 9 had the highest casualty rate. The lowest casualty rate was recorded for persons under 5 or between the ages of 35 and 54. The greatest number of fatalities was in the age group 65 and over. This is also reflected in the relatively high casualty rate for this age group.

* Source - Based on postcensal estimate of the population by sex and age, Canada and Provinces, 1985, Statistics Canada.

PEDESTRIAN CASUALTIES
RATE PER 10,000 POPULATION
1985

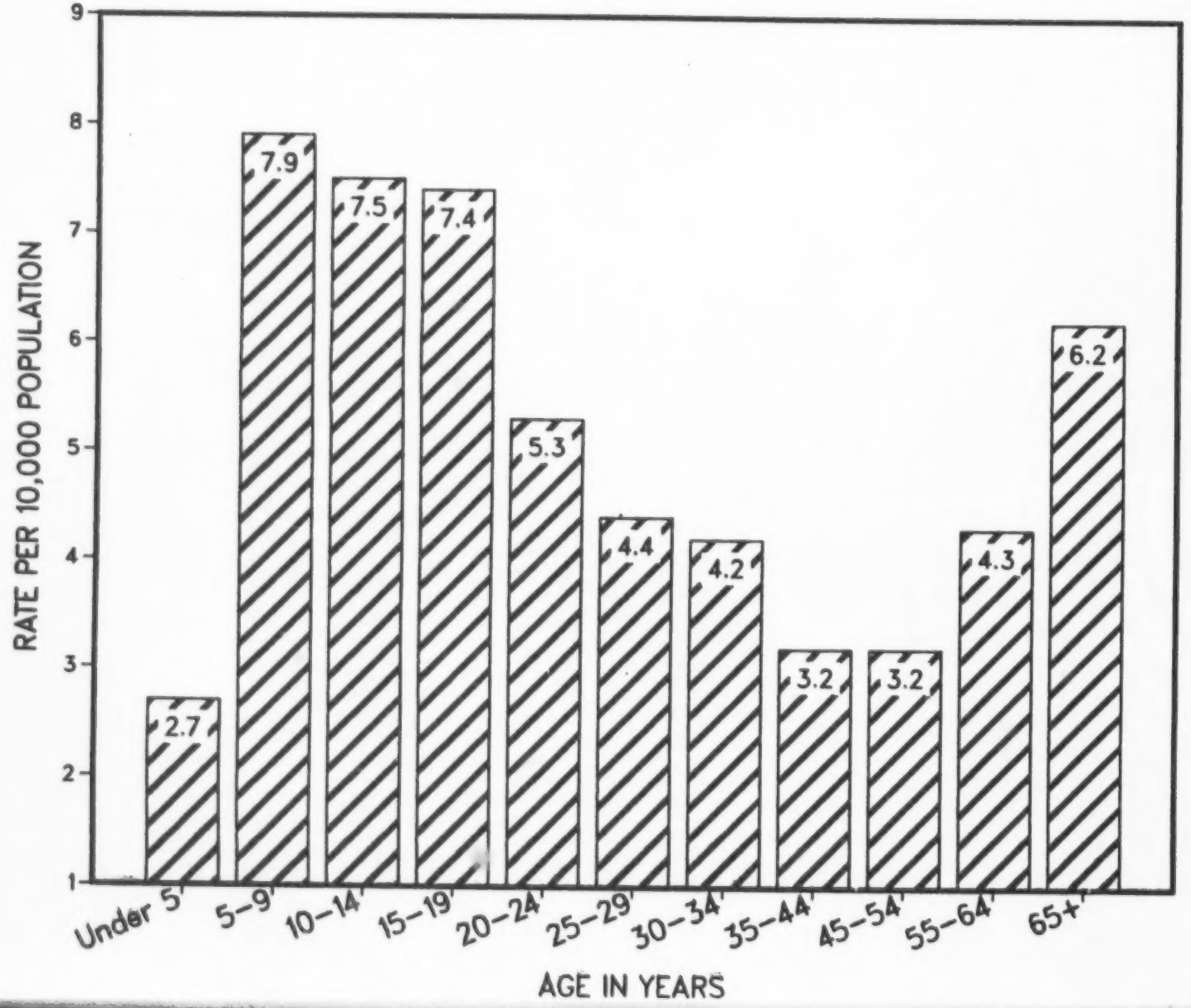


Figure 7

TRAFFIC SAFETY ISSUES

ALCOHOL INVOLVEMENT

- A total of 12.2% of all drivers involved in casualty collisions were judged to have consumed alcohol before the crash. As the severity of the collision increased, the involvement of alcohol dramatically increased.

- Of those drivers who had consumed alcohol and were involved in casualty collisions, there were approximately 6 times as many male drivers as female drivers. The majority were young male drivers under the age of 30.

- Alcohol related crashes were most likely to occur during the summer months, on the weekends and during the late evening hours.

- Figure 8 provides a graphic representation of the involvement of drinking drivers in casualty collisions over the five years 1981-1985. Their involvement in fatal crashes has been declining very slightly since 1981.

RESTRAINT USE

- Of all casualties in traffic crashes during 1985, only 14.7% were wearing seat belts at the time of the crash.

- Restraint use was highest for injured children under 5 years of age and lowest for 16 to 17 years old.

Table 9.1

CONDITION OF DRIVERS IN CASUALTY COLLISIONS*
1985

Condition of Driver	Fatal Collisions		Non-Fatal Injury Collisions		Total Drivers In Casualty Collisions	
	N	%	N	%	N	%
Normal	**388**	**72.9**	**17172**	**87.0**	**17560**	**86.6**
Had Been Drinking	91	17.1	1507	7.6	1598	7.9
Alcohol Impaired	47	8.8	829	4.2	876	4.3
TOTAL Alcohol Involvement	**138**	**25.9**	**2336**	**11.8**	**2474**	**12.2**
Other	6	1.1	236	1.2	242	1.2
TOTAL Number of Drivers	**532**	**100.0**	**19744**	**100.0**	**20276**	**100.0**

OBSERVATIONS

A total of 12.2% of all drivers involved in casualty collisions were judged to have consumed alcohol before the crash. As the severity of the collision increased, the involvement of alcohol dramatically increased. Of all drivers involved in injury collisions, 11.8% had consumed alcohol before the crash, compared to 25.9% in fatal collisions.

* Based only on cases where driver condition was specified on the collision report form.

INVOLVEMENT OF DRINKING DRIVERS IN CASUALTY COLLISIONS 1981–1985

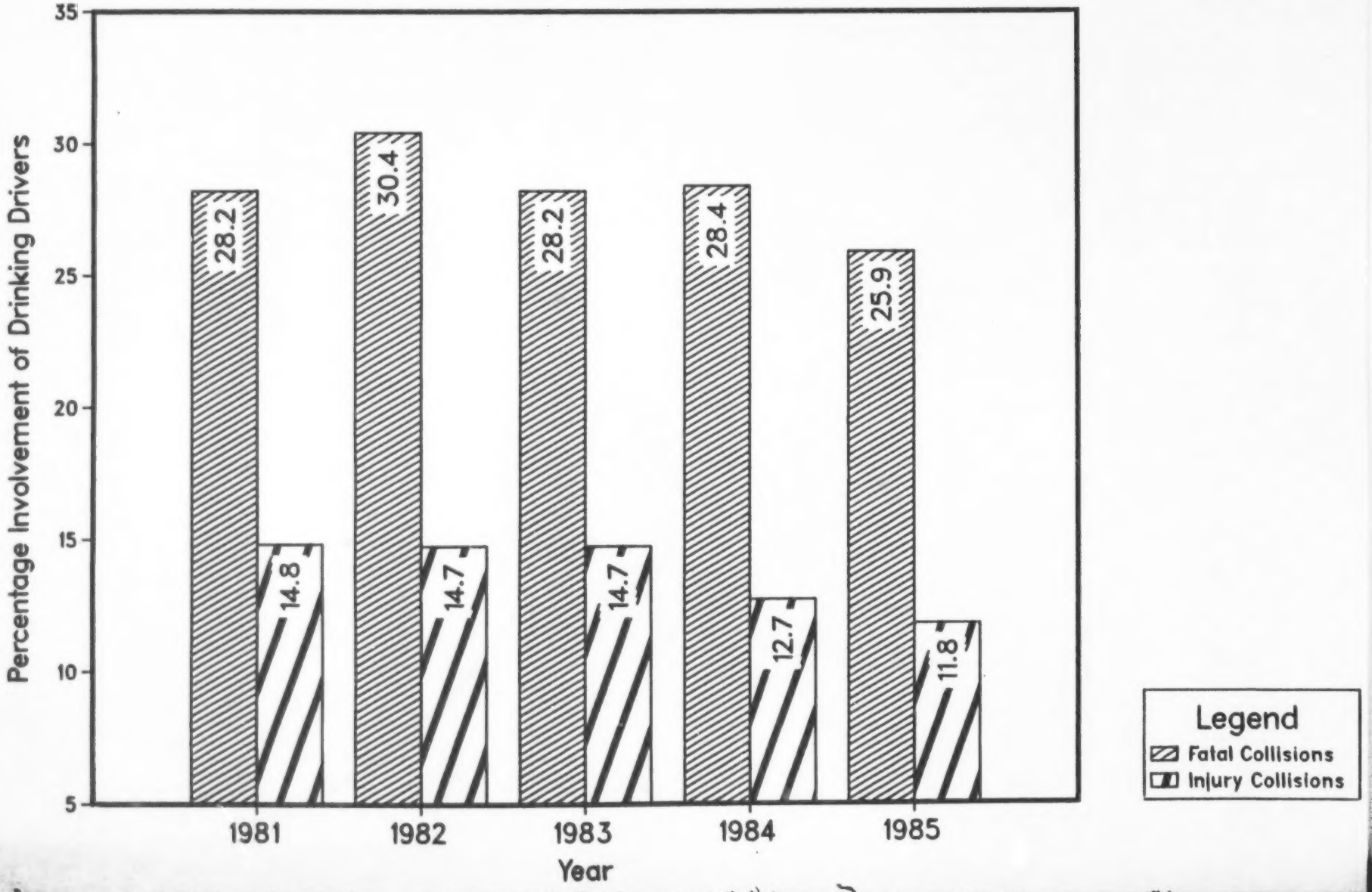


Figure 8

DRIVER CONDITION IN CASUALTY COLLISIONS
1985

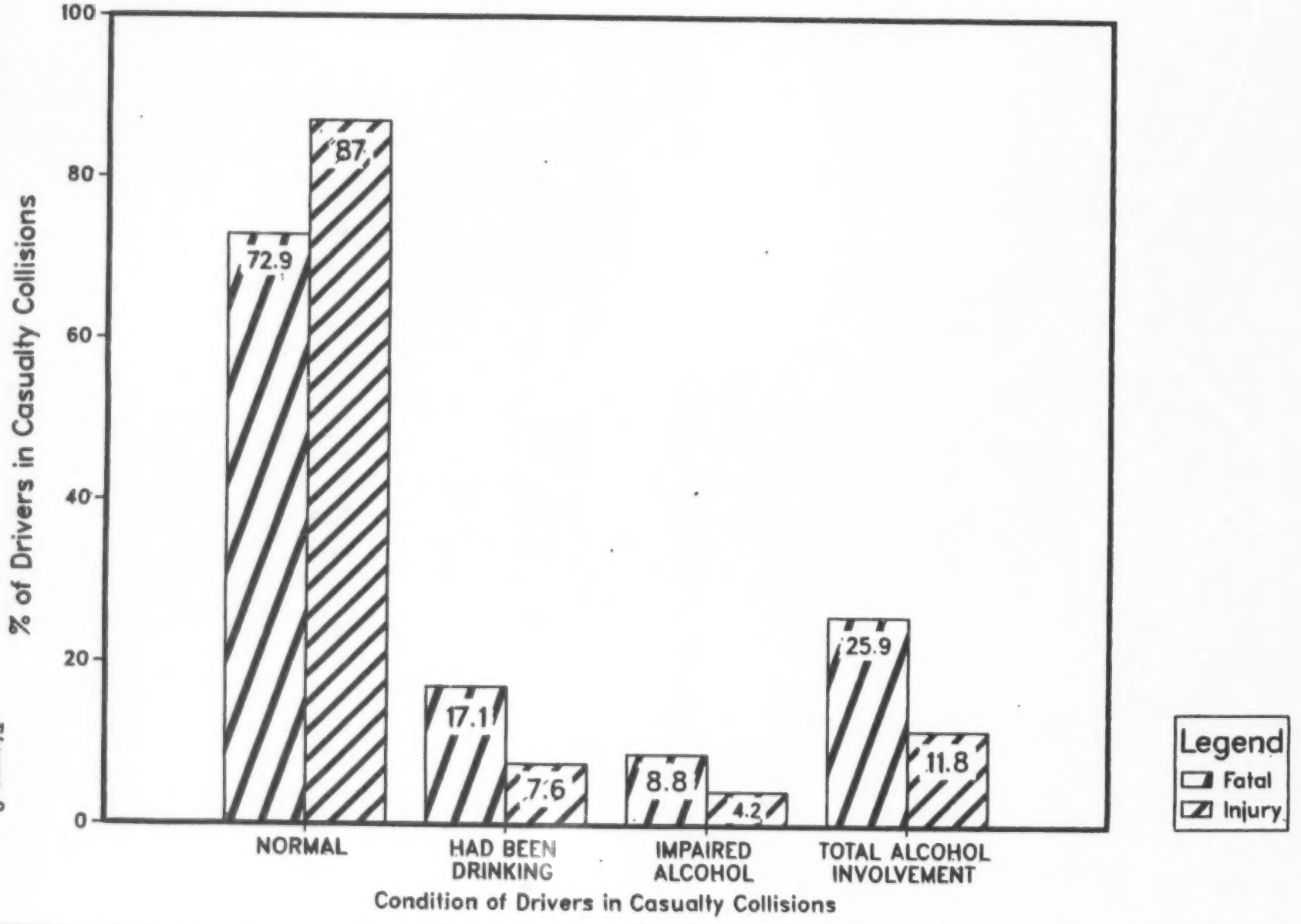


Figure 9

Table 9.2
AGE AND SEX OF DRINKING DRIVERS
INVOLVED IN CASUALTY COLLISIONS
1985

Age in Years	Sex of Driver								
	Male		Per 1000** Licensed Drivers	Female		Per 1000* Licensed Drivers	TOTAL*		Per 1000** Licensed Drivers
	N	%		N	%		N	%	
Under 16	11	0.5	0.7	5	1.4	0.5	17	0.7	0.6
16 - 17	98	4.7	3.2	25	6.8	1.0	123	5.0	2.2
18 - 19	268	12.8	7.0	54	14.8	1.7	324	13.1	4.6
20 - 21	246	11.8	4.9	53	14.5	1.2	301	12.2	3.2
22 - 24	378	18.1	3.9	48	13.2	0.6	429	17.3	2.4
25 - 29	410	19.6	2.3	76	20.8	0.5	486	19.6	1.5
30 - 34	229	11.0	1.6	41	11.2	0.4	270	10.9	1.1
35 - 44	243	11.6	1.3	38	10.4	0.2	281	11.4	0.8
45 - 54	107	5.1	0.9	17	4.7	0.2	124	5.0	0.6
55 - 64	7	0.3	0.1	1	0.3	0.0	8	0.3	0.1
65 and over	3	0.1	0.0	0	0.0	0.0	3	0.1	0.0
Unspecified	87	4.2	-	7	1.9	-	108	4.4	-
TOTAL	**2087**	**100.0**		**365**	**100.0**		**2474**	**100.0**	**100.0**

OBSERVATIONS

Of those collision-involved drivers who had consumed alcohol, there were approximately 6 times as many male drivers as female drivers. The majority were young male drivers under the age of 30. In terms of involvement per 1,000 licensed drivers males, 18-19 years of age, are more likely to have consumed alcohol prior to a casualty collision than any other age group. After the age of 30, alcohol consumption sharply decreased for both male and female drivers.

* Includes drivers whose sex was unspecified on the collision report form.

** Source: Alberta Solicitor General - Motor Vehicles Division. Operator Statistics, May 31, 1985.

AGE AND SEX OF DRINKING DRIVERS INVOLVED IN CASUALTY COLLISIONS RATE PER 1000 LICENSED DRIVERS 1985

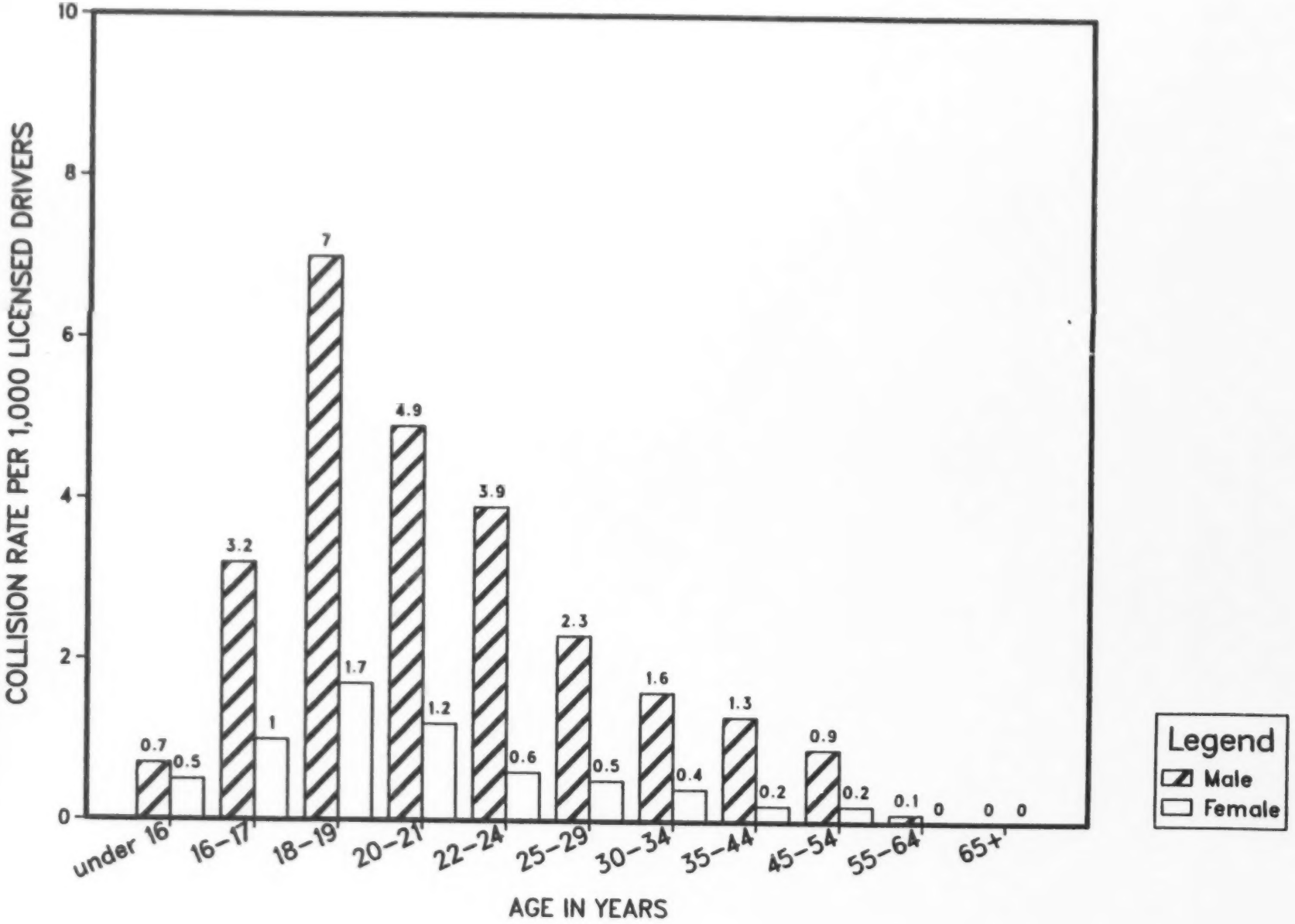


Figure 10

Table 9.3

ALCOHOL-INVOLVED CASUALTY COLLISIONS:
MONTH OF OCCURRENCE
1985

MONTH	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
January	7	5.3	120	5.3	127	5.3
February	5	3.8	135	6.0	140	5.9
March	11	8.3	167	7.4	178	7.5
April	11	8.3	181	8.1	192	8.1
May	17	12.9	211	9.4	228	9.6
June	19	14.4	217	9.7	236	9.9
July	9	6.8	247	11.0	256	10.8
August	14	10.6	254	11.3	268	11.3
September	13	9.8	210	9.3	223	9.4
October	15	11.4	199	8.9	214	9.0
November	6	4.5	187	8.3	193	8.1
December	5	3.8	118	5.3	123	5.2
TOTAL	**132**	**100.0**	**2246**	**100.0**	**2378**	**100.0**

OBSERVATIONS

The summer months from June to August accounted for the largest proportion of alcohol-involved casualty collisions. The months of December, January and February accounted for the least proportion of alcohol-involved casualty collisions.

Table 9.4

ALCOHOL-INVOLVED CASUALTY COLLISIONS: DAY OF WEEK 1985

DAY OF WEEK	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
Monday	6	4.5	146	6.5	152	6.4
Tuesday	11	8.3	228	10.2	239	10.1
Wednesday	10	7.6	233	10.4	243	10.2
Thursday	16	12.1	255	11.4	271	11.4
Friday	26	19.7	410	18.3	436	18.3
Saturday	38	28.8	574	25.6	612	25.7
Sunday	25	18.9	400	17.8	425	17.9
TOTAL	**132**	**100.0**	**2246**	**100.0**	**2378**	**100.0**

OBSERVATIONS

The highest number of alcohol-involved casualty collisions occurred on Saturdays. The least number of alcohol-involved casualty collisions occurred on Mondays.

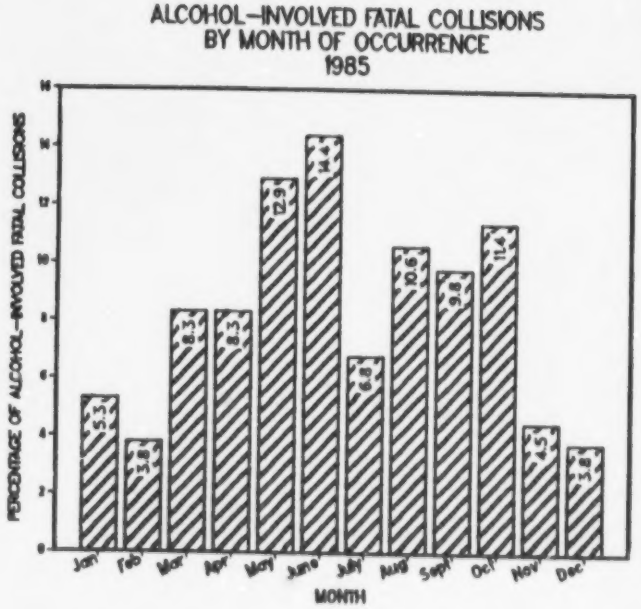
Table 9.5

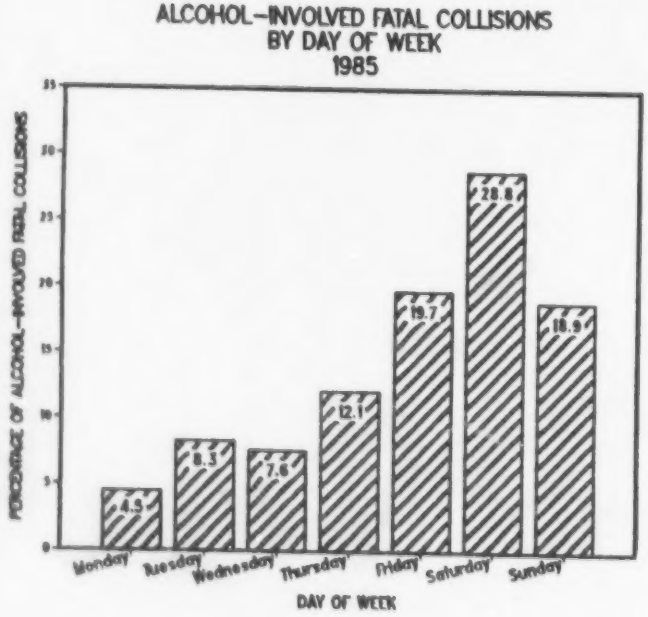
ALCOHOL-INVOLVED CASUALTY COLLISIONS:
TIME OF OCCURRENCE
1985

TIME PERIOD	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
11:00 P.M. - 2:59 A.M.	46	34.8	796	35.4	842	35.4
3:00 A.M. - 6:59 A.M.	21	15.9	328	14.6	349	14.7
7:00 A.M. - 10:59 A.M.	11	8.3	70	3.1	81	3.4
11:00 A.M. - 2:59 P.M.	5	3.8	112	5.0	117	4.9
3:00 P.M. - 6:59 P.M.	25	18.9	337	15.0	362	15.2
7:00 P.M. - 10:59 P.M.	23	17.4	534	23.8	557	23.4
Unspecified	1	0.8	69	3.1	70	2.9
TOTAL	**132**	**100.0**	**2246**	**100.0**	**2378**	**100.0**

OBSERVATIONS

The late evening/early morning time period was most likely to record alcohol-involved casualty collisions. (11 p.m. - 2:59 a.m.) The morning rush hour was the time period least likely to record alcohol-involved casualty crashes.


ALCOHOL–INVOLVED FATAL COLLISIONS
BY MONTH OF OCCURRENCE
1985
PERCENTAGE OF ALCOHOL–INVOLVED FATAL COLLISIONS
5.3
3.8
8.3
8.3
12.9
14.4
6.8
10.6
9.8
11.4
4.5
3.8
Jan
Feb
Mar
Apr
May
June
July
Aug
Sept
Oct
Nov
Dec
MONTH


ALCOHOL–INVOLVED FATAL COLLISIONS
BY DAY OF WEEK
1985
PERCENTAGE OF ALCOHOL–INVOLVED FATAL COLLISIONS
4.5
8.3
7.6
12.1
19.7
28.8
18.9
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
DAY OF WEEK

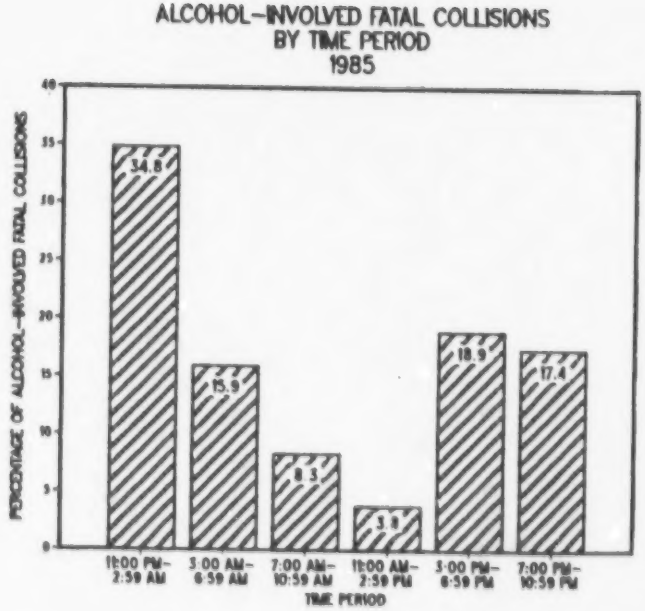

ALCOHOL–INVOLVED FATAL COLLISIONS
BY TIME PERIOD
1985
PERCENTAGE OF ALCOHOL–INVOLVED FATAL COLLISIONS
34.8
15.9
8.3
3.8
18.9
17.4
11:00 PM–
2:59 AM
3:00 AM–
6:59 AM
7:00 AM–
10:59 AM
11:00 AM–
2:59 PM
3:00 PM–
6:59 PM
7:00 PM–
10:59 PM
TIME PERIOD

Figure 11

Table 9.6

RESTRAINT USAGE RATE BY AGE OF OCCUPANT CASUALTIES IN TRAFFIC COLLISIONS 1985

Age in Years	Restraint Usage Rate (%)
Under 5	33.0
5 - 9	20.4
10 - 15	9.7
16 - 17	7.0
18 - 19	8.5
20 - 21	11.5
22 - 24	14.1
25 - 29	17.5
30 - 34	17.2
35 - 44	17.7
45 - 54	14.8
55 - 64	16.6
65 and over	15.7
Overall Wearing Rate*	**14.7**

OBSERVATIONS

Of all persons killed or injured in traffic crashes during 1985, only 17.3% were wearing seat belts at the time of the crash. Restraint use was highest (33.0%) for injured children under 5 years of age and lowest for 16 to 17 year olds (7.0%).

* Includes those cases where age of injured occupant was not specified on the collision report form.

RESTRAINT USAGE RATES BY AGE OF OCCUPANTS INJURED IN COLLISIONS IN ALBERTA 1985

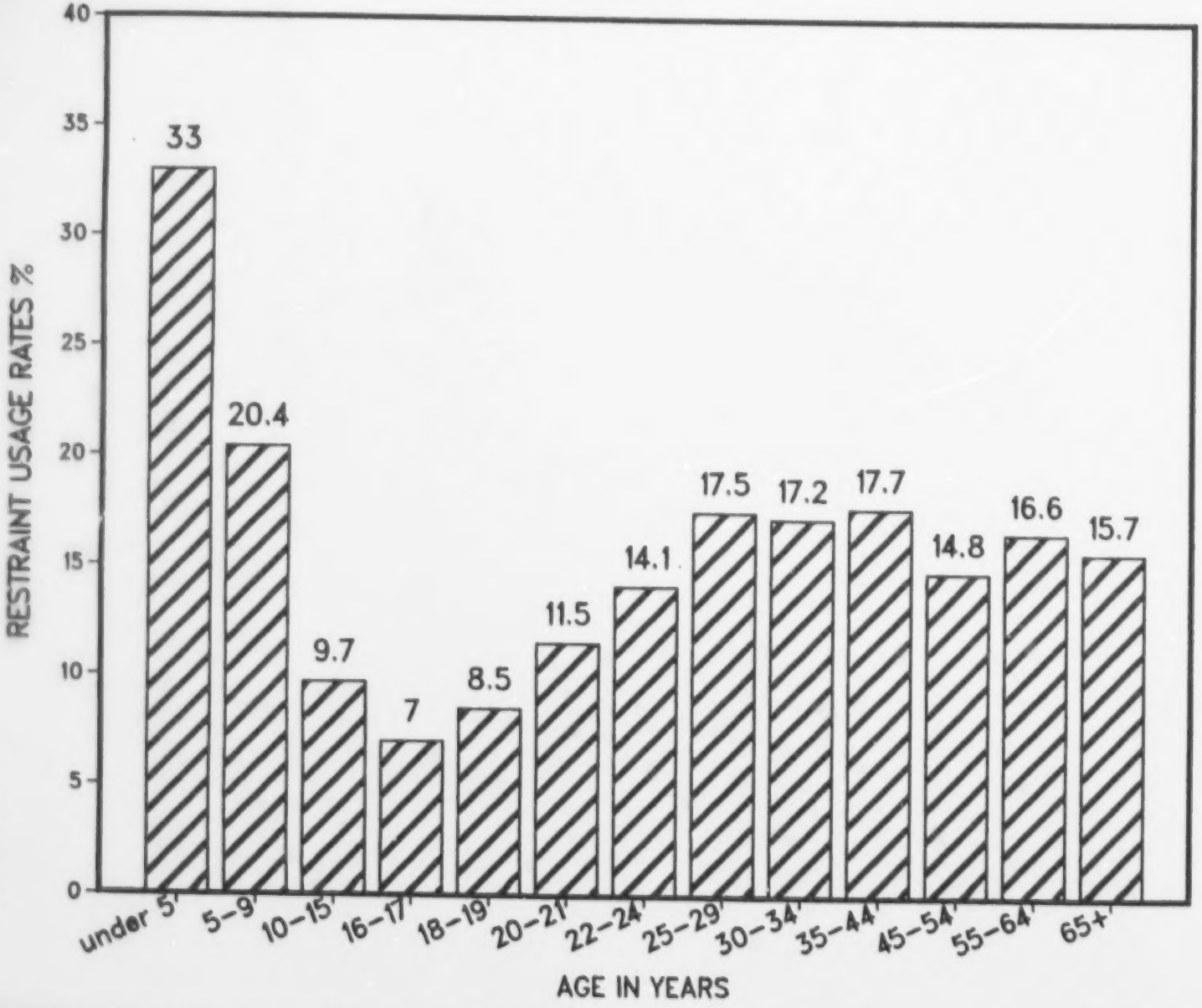


Figure 12